



# Army Modularity and the Future Engineer Force

## Overview for: USMC Engineer Master Planning Conference 22 February 2005





# The Strategic Context

- We are a nation at war
- This is a prolonged period of conflict for the US with great uncertainty about the nature and location of that conflict
- We must be able to defuse crises and/or defeat aggression early to prevent escalation, limit damage
- Thus, we need flexible, rapidly deployable forces and sufficient depth and strength to sustain multiple, simultaneous operations



***We have over 350,000  
SOLDIERS overseas in 120  
countries***

***Combatant Commanders need versatile, potent land  
power***

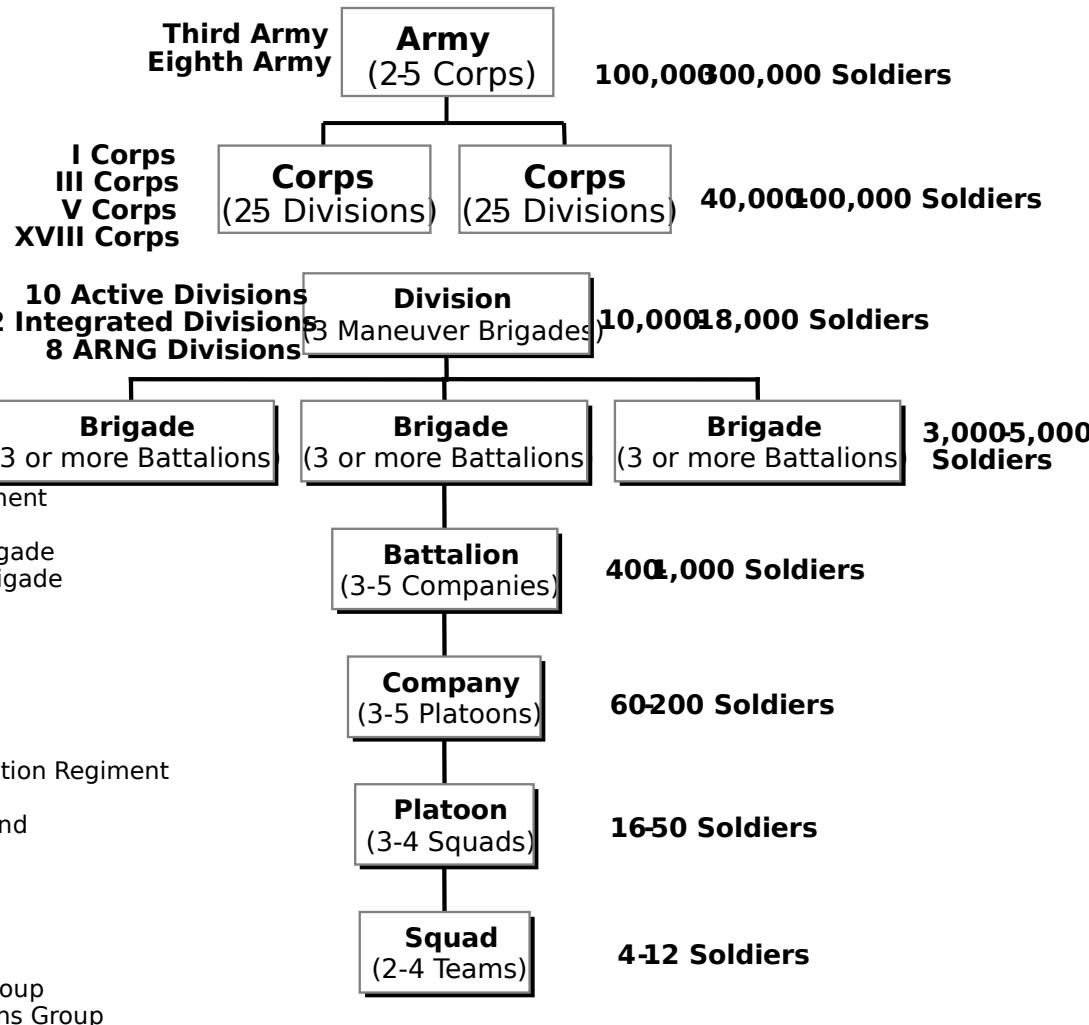


# Challenges for the Current Force

- **War is the norm, peace is the exception**
- **Our adversaries seek adaptive advantage through asymmetry**
- **We have near peer competitors in niche areas**
- **Conventional Force on Force conflicts are still possible**
- **There is an enormous pool of potential combatants armed with irreconcilable ideas**
- **Our homeland is part of the battlespace**
- **We are adapting to these challenges NOW**



# The Army Today



# What the Current Force Looks Like

**The Army Division** = traditional building block

But...  = ~15,000 Soldiers & Equipment

- Optimized for major land campaigns against similarly organized forces (typically over 20,000 when deployed)
- Large, fixed organizations with interconnected parts
- Requires extensive reorganization to create force packages
- Limits Regional Combatant Commander's ability to mix and match packaged capabilities for mission ***We're good, but we can be better...***
- Limited Joint capabilities

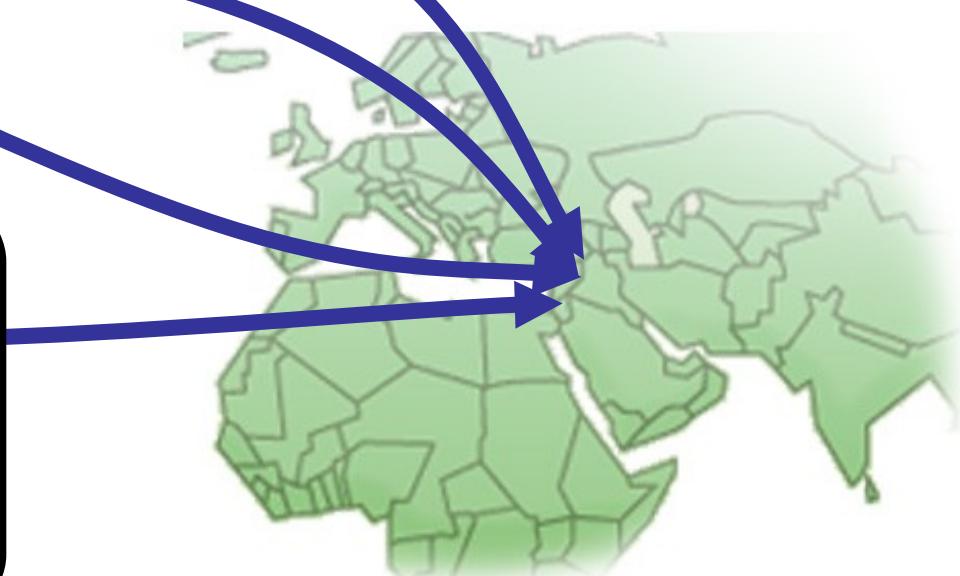


# Projecting the Army Worldwide



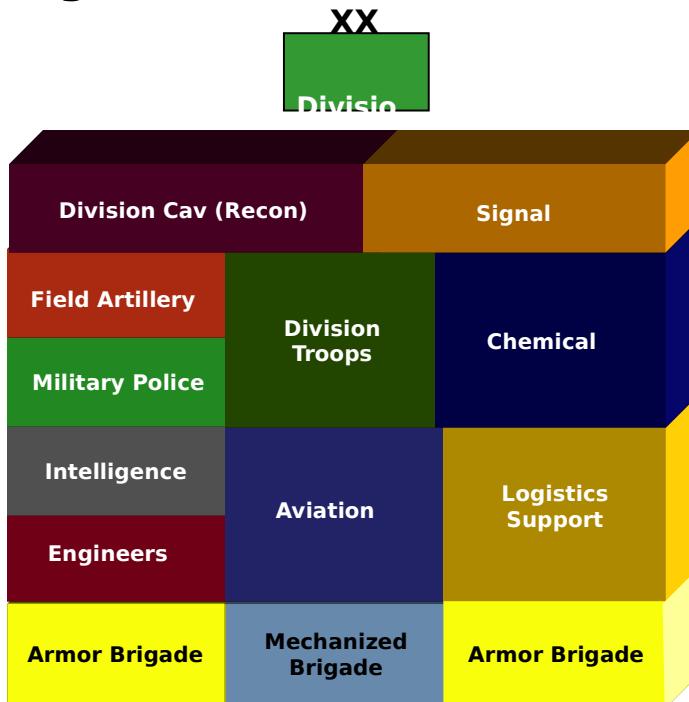
- Units not tied to division base.
- Simultaneous deployment from multiple power projection platforms.

- Basing supports a campaign quality Army with joint and expeditionary capabilities.
- Power projection platforms provide full range of support for responsive deployment, employment and sustainment of forces.

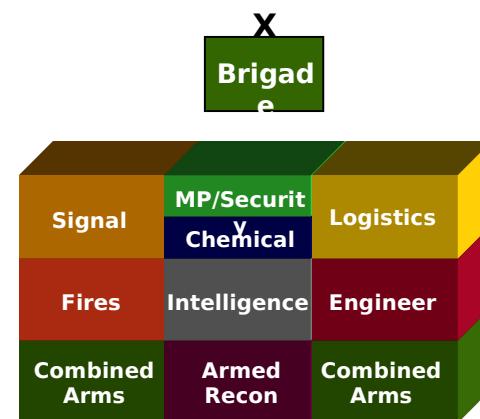


# From Division to Brigade - Centric

**FROM:** An Army based around large, powerful, fixed organizations



**TO:** An Army designed around smaller, more self-contained organizations



. . . and modular multi-functional Support Brigades



*A More Ready and Relevant Force*

# With Brigades as Building Blocks

(Less than 4,000 Soldiers in each  
Brigade)

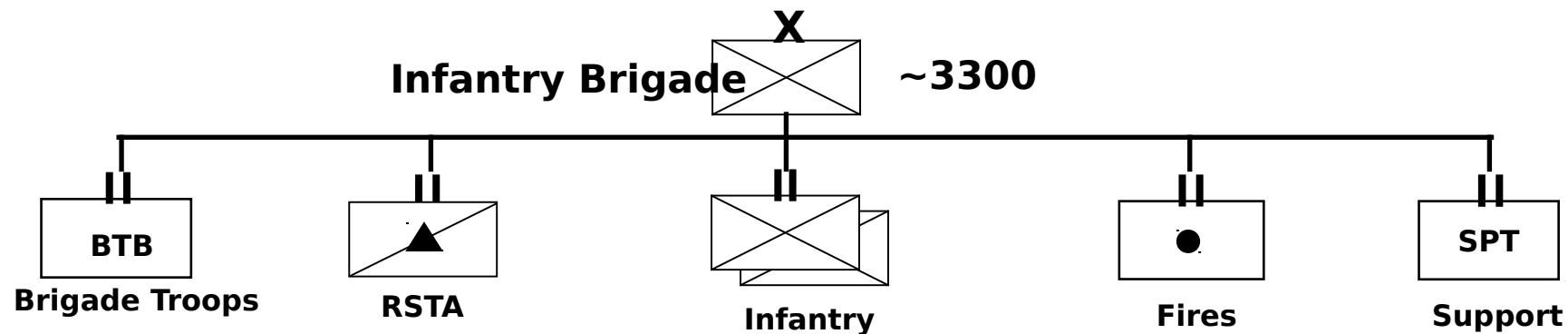
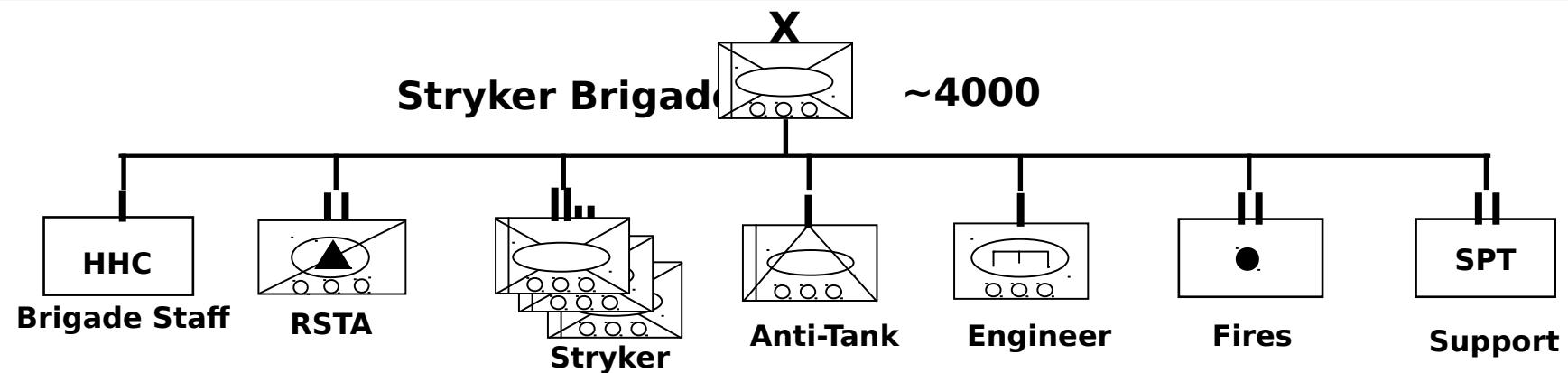
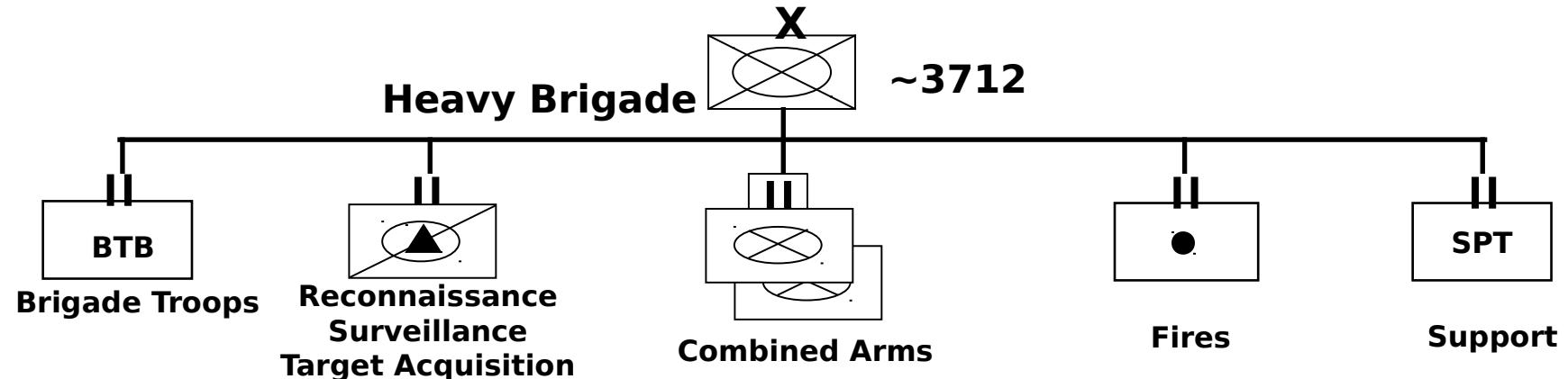


Standard maneuver brigades with organic combined arms  
capabilities



Supporting brigades with standard headquarters, but variable  
subordinate units

# Brigade Combat Teams



# Employing the Army in the Joint F

**Units Available** +



**Headquarter(s) &  
Command Posts** +

**A Commander**

**UEy**

**UEx**

4★/3★/2★/1★/

**Tailored Land Forces  
for Regional  
Combatant  
Commanders**

# Levels of Command

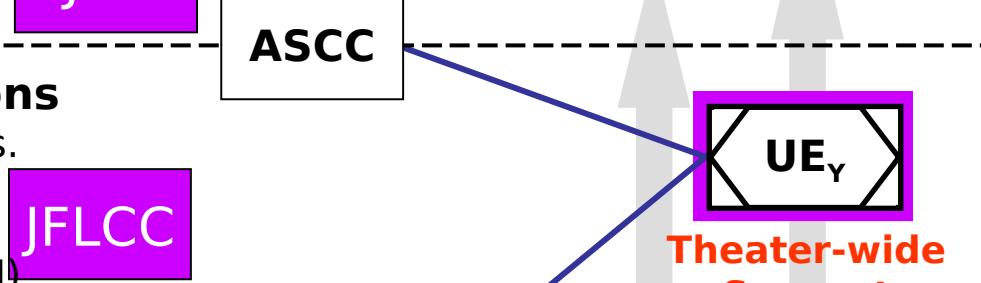
## • Joint - Campaign Level

- Integrates the military instrument with other instruments of national power.
- Integrates all elements of the joint force.



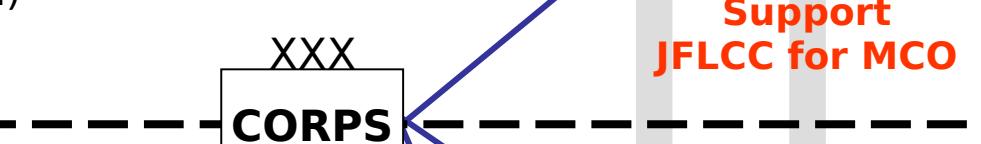
## • Operational - Major Land Operations

- Plan and execute major land operations.
- Orchestrates Joint, Interagency & MN operations.
- Execute Administrative Control (ADCON) and Army Support to Other Services (ASOS).



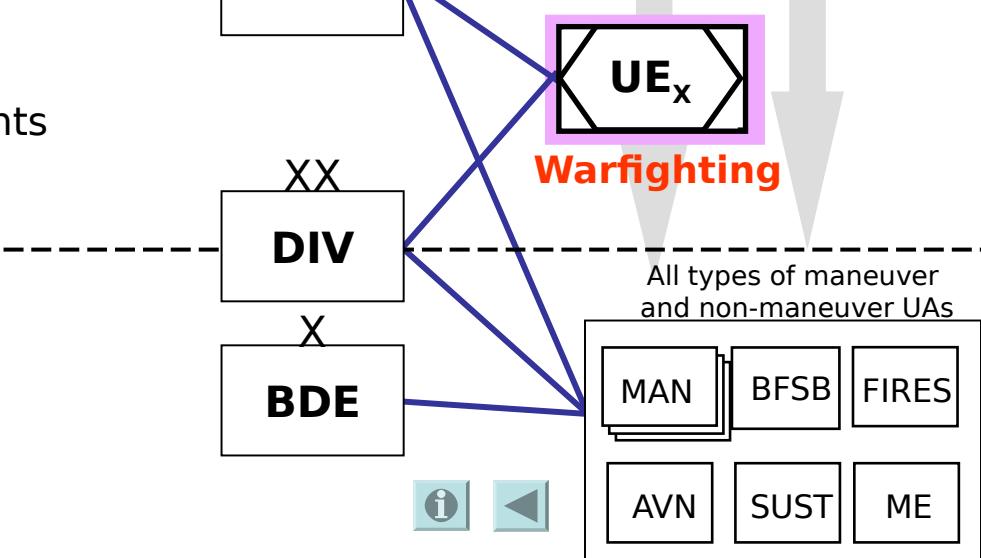
## • Tactical - Battles

- Puts together complementary and reinforcing capabilities with engagements to achieve military conditions within a specified Area of Operations (AO).



## • Tactical - Engagements

- Close Combat.
- Generates specific effects / outcomes within the AO.





# The Army Campaign Plan

	FY04	FY05	FY06	FY07	FY08	FY09	FY10
AC UEx							
AC BCTs	 4 4 3	 4 4 2	 4 3 4 4	 3 4 4 4 AK			
ARNG UEx							
ARNG BCTs		 30 HVY 81 HVY 39 IN	 116 HVY 256 HVY 278 HVY 86 IN 155 HVY (HVO)	 48 HVY 41 IN 218 HVY 37 IN 55 HVY 2 IN	 56 IN 49 IN 3 IN 50 IN 149 IN 2 IN SBCT 1	 53 IN 2 IN 45 IN 92 IN 32 IN 29 IN SBCT 2	 1 IN 3 IN 26 IN 76 IN 66 IN 207 IN
RESERVE			USAR Restructure				
		1 <sup>st</sup> AREP	2 <sup>d</sup> and 3 <sup>rd</sup> AREPs	4 <sup>th</sup> and 5 <sup>th</sup> Army Reserve			Expeditionary Package (AREP)
				Regional Readiness Commands Redesign			
STRYKER	SBCT2	SBCT3	SBCT4	SBCT5	SBCT6		



DP Decision point for an additional 5 AC Modular Brigade Combat Teams

Army Maneuver Brigades 2003			
	AC	ARNG	Total
Airborne	4	0	4
Infantry	10	15	25
Stryker	2	0	2
Heavy	17	23	40
Total	33	38*	71



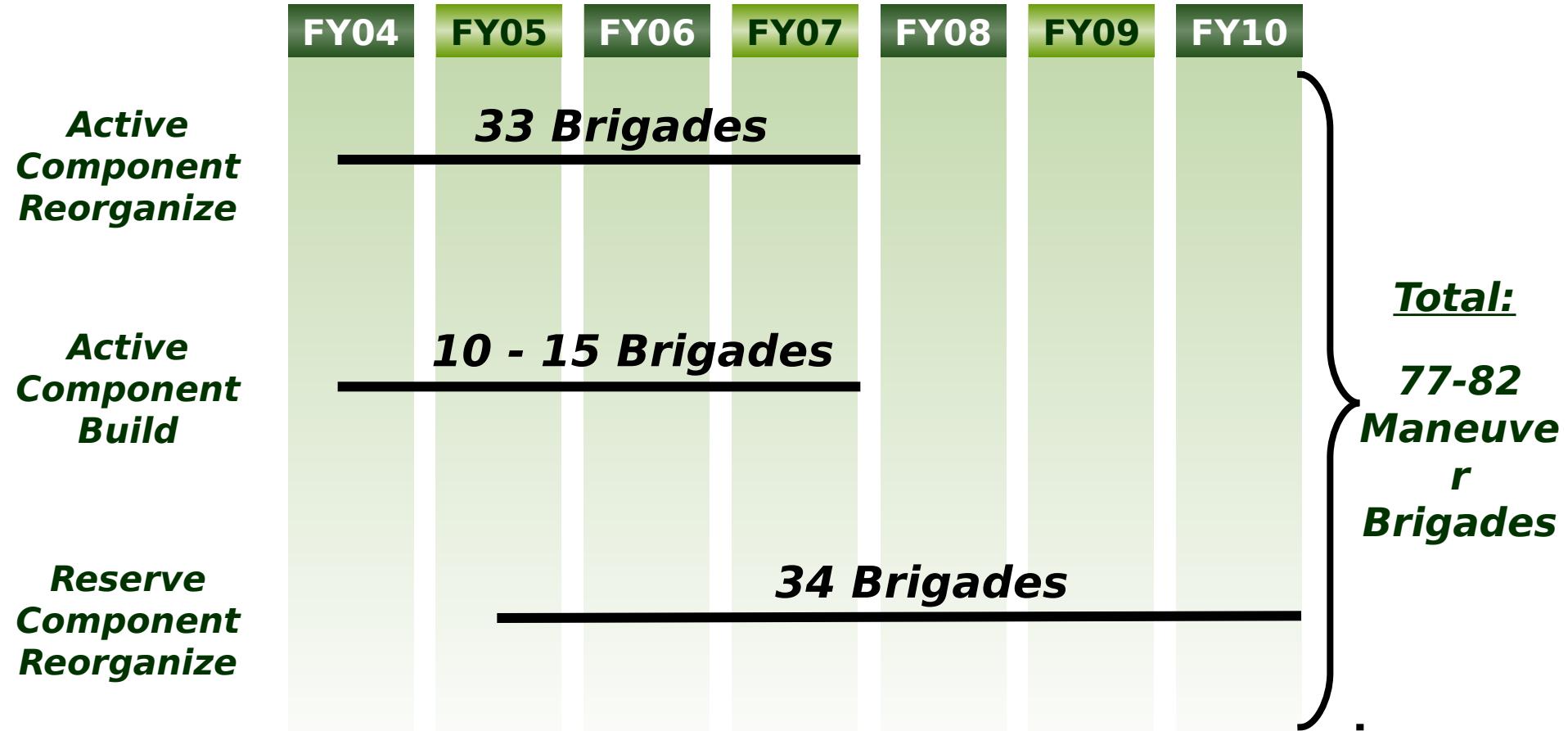
Army Maneuver Brigades 2010			
	AC	ARNG	Total
Airborne	6	0	6
Infantry	12-17	23	35-40
Stryker	5	1	6
Heavy	20	10	30
Total	43-48	34	77-82

- Increased Joint Combat Capability
- Globally Managed Deployments
- Improved Versatility

- Modular AC/RC Design
- Increased Readiness
- Increases Stability



# We are Converting the Army Now



*Common organizational designs for Active and Reserve*



# Ready Forces: AC/ARNG/USAR

“Our Army at War—Relevant and Ready”

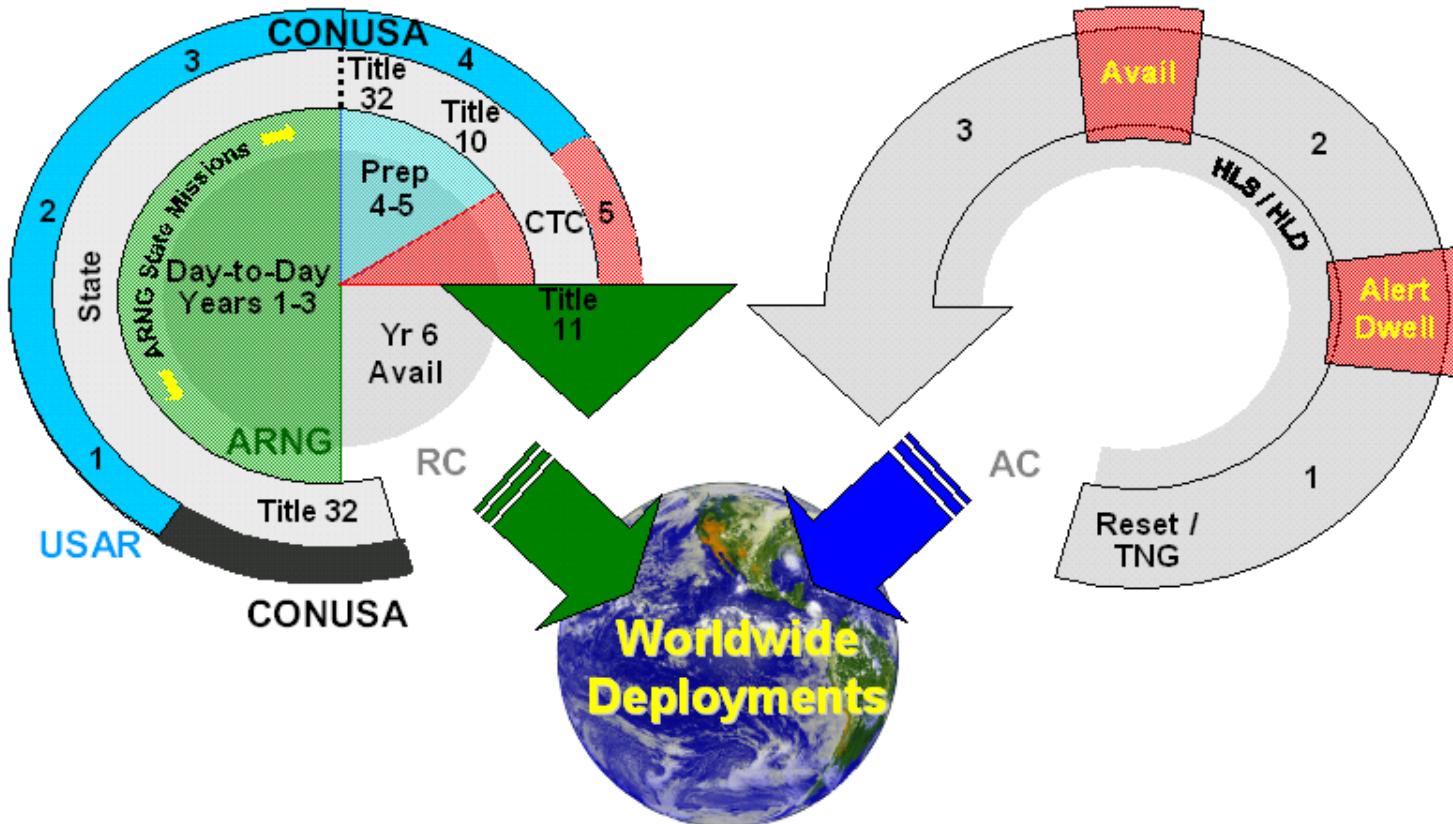
## Reserve Component (ARNG & RC)

BCT(UAs) 6 year cycle (1 year in 6)

AREP 6 year cycle (1 year in 6)

## Active Component

3 year cycle (1 year in 3)



- Manage readiness and availability of forces.
- Maneuver resources based on rotation sequences. Rotate idle equipment to needed locations to maximize employment and readiness.





# What Isn't Changing

*The Soldier is the  
Centerpiece of All Our  
Units*

- ✓ Everything we do is designed to support the Soldier
- ✓ A heritage of fighting and winning our Nation's Wars
- ✓ Traditions reflected in our unit's lineage and honors



# Soldier's Creed

**I am an American Soldier.**

**I am a Warrior and a member of a team. I serve the people of the United States and live the Army Values.**

***I will always place the mission first.***

***I will never accept defeat.***  
***I will never quit.***

***I will never leave a fallen comrade.***

**I am disciplined, physically and mentally tough, trained and proficient in my warrior tasks and drills. I always maintain my arms, my equipment and myself.**

**I am an expert and I am a professional.**

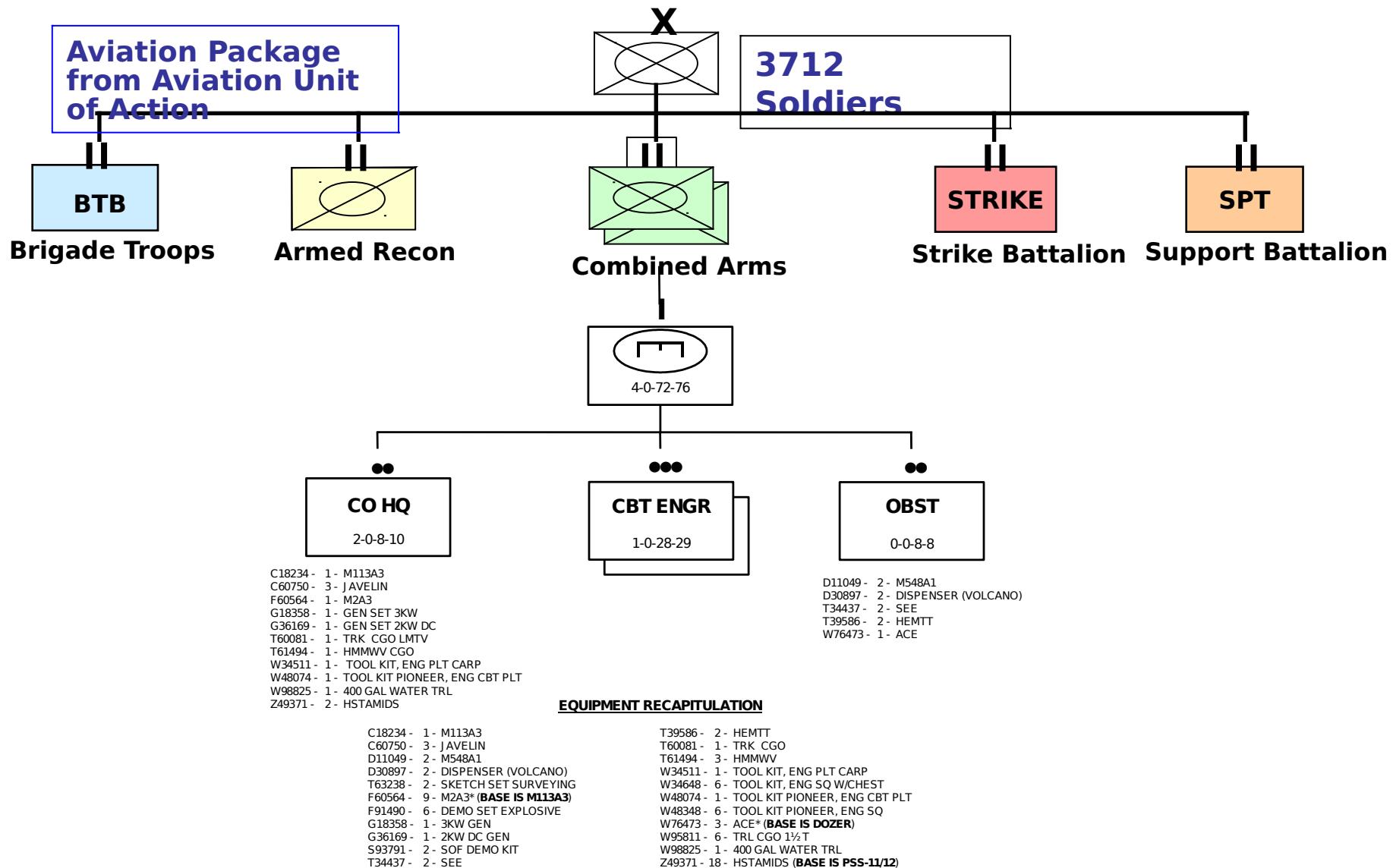
**I stand ready to deploy, engage, and destroy the enemies of the United States of America in close combat.**

**I am a guardian of freedom and the American way of life.**

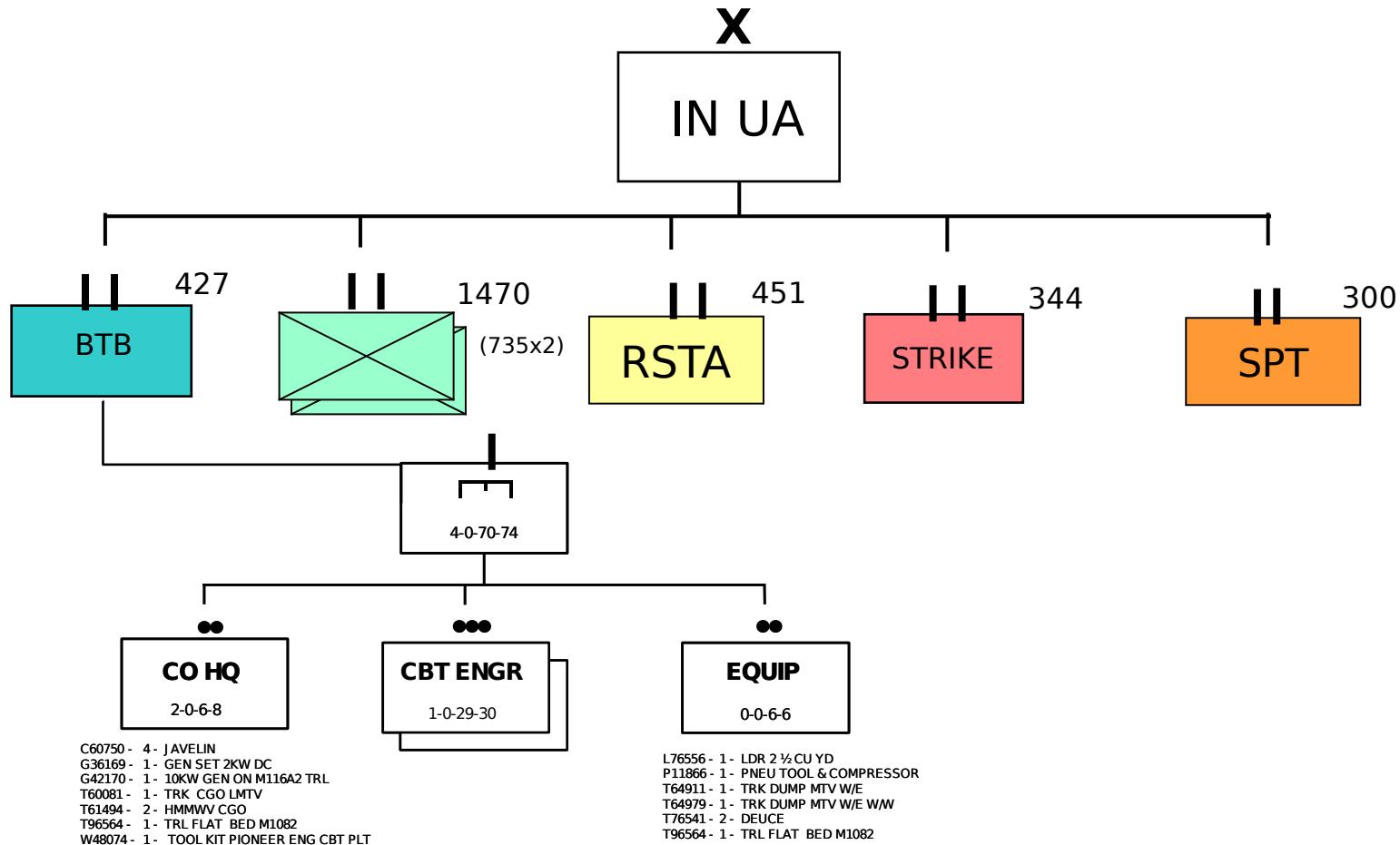
**I am an American Soldier.**

# Modular Force Designs

# Heavy Brigade Combat Team



# Infantry Brigade Combat Team

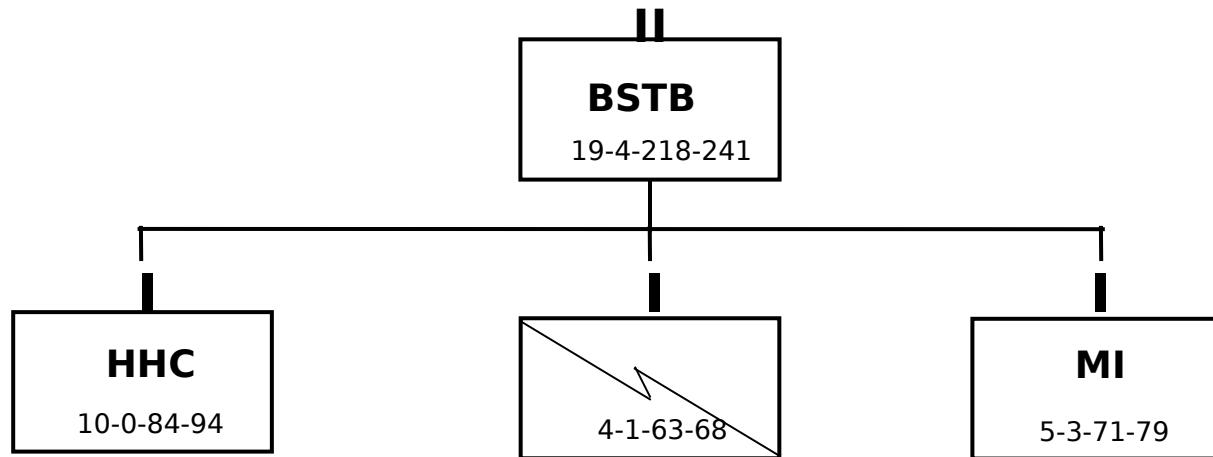


## EQUIPMENT RECAPITULATION

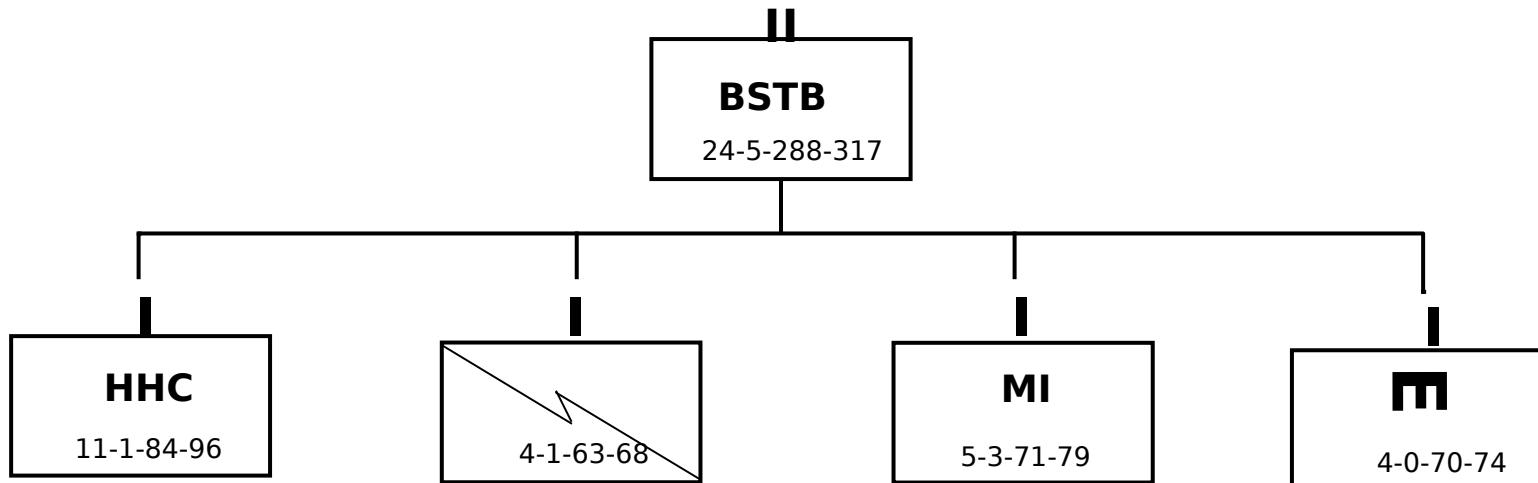
C60750 - 4- JAVELIN	T61562 - 8- HMMWV CGO W/W
D03932 - 12- HSTAMIDS	T63238 - 2- SKETCH SET SURVEYING
F91490 - 6- DEMO SET EXPLOSIVE	T64911 - 1- TRK DUMP MTV W/E
G36169 - 1- GEN SET 2KW DC	T64979 - 1- TRK DUMP MTV W/E W/W
G42170 - 1- 10KW GEN ON M116A2 TRL	T76541 - 2- DEUCE
L76556 - 1- LDR 2 1/2 CU YD	T95992 - 8- TRL CGO HI MOB 3/4 T
P11866 - 1- PNEU TOOL & COMPRESSOR	T96564 - 1- TRL FLT BED M1082 LMTV
S93791 - 2- SOF DEMO KIT	W34511 - 2- TOOL KIT CARP ENG PLT
T34437 - 4- SEE	W34648 - 6- TOOL KIT CARP ENG SQ
T60081 - 1- TRK CGO LMTV	W48074 - 1- TOOL KIT PIONEER ENG CBT PLT
T61494 - 4- HMMWV CGO	W48348 - 6- TOOL KIT PIONEER ENG SQ

# BRIGADE SPECIAL TROOPS BATTALION

## BSTB Heavy BCT



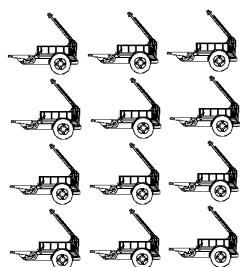
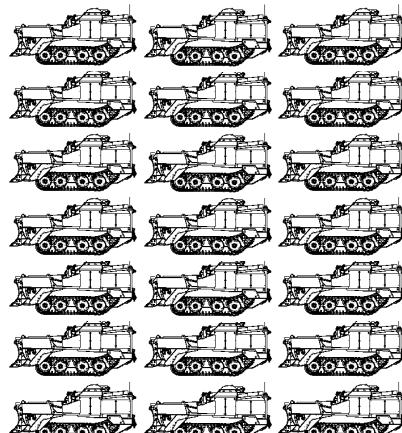
## BSTB Infantry BCT



# **Significant Loss of Capability inside the Modular Army BCT**

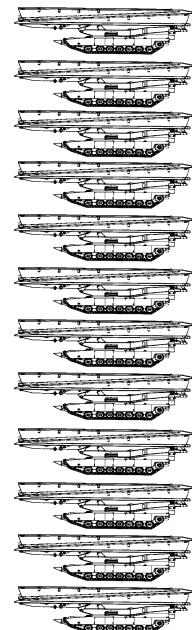
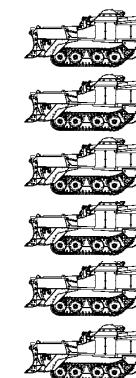
## **Current Force**

1 Bn (3 Co's) of Sappers : 415 Soldiers  
Support 9 Maneuver Companies



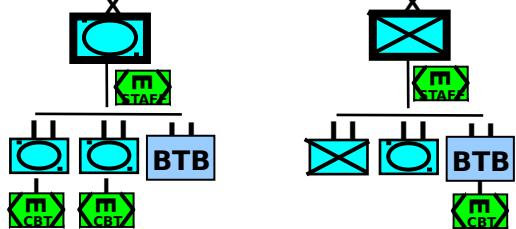
## **Future Force**

2 Co's of Sappers : 152 Soldiers  
Support 11 Maneuver Companies



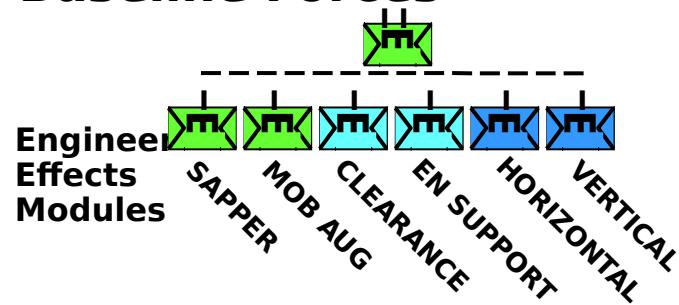
# Expeditionary Engineer Force Design... ...Layered Capability Framework

## Embedded Capability



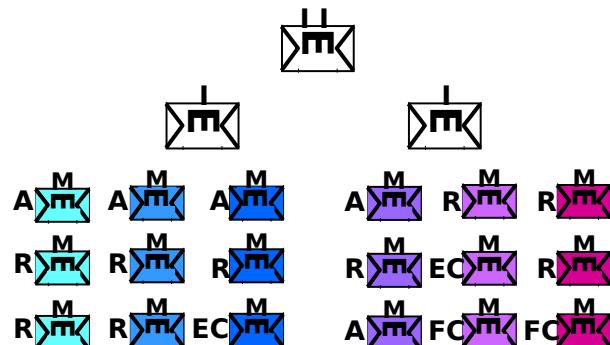
- Engineer units that are organic to a Brigade Combat Teams
- Provides minimum level of most critical / most frequently required engineer capabilities
- Must have augmentation for full spectrum operations

## Baseline Forces



- Combines engineer C<sup>2</sup> with a baseline of engineer capabilities to augment BCT shortfalls and support other UEEx requirements
- Receives -- and depends upon -- modules from force pool for mission specific capabilities

## Mission Module Forces



- Primarily provides engineer effects modules required to respond to specific missions
- Organization is modular from squad to company
  - Maximum commonality of design
  - Fixed organizations with discrete sets of capabilities
  - Scalable robustness

A - Active EEM  
R - NG/USAR EEM  
EC - Equip Contract EEM  
FC - Full Contract EEM

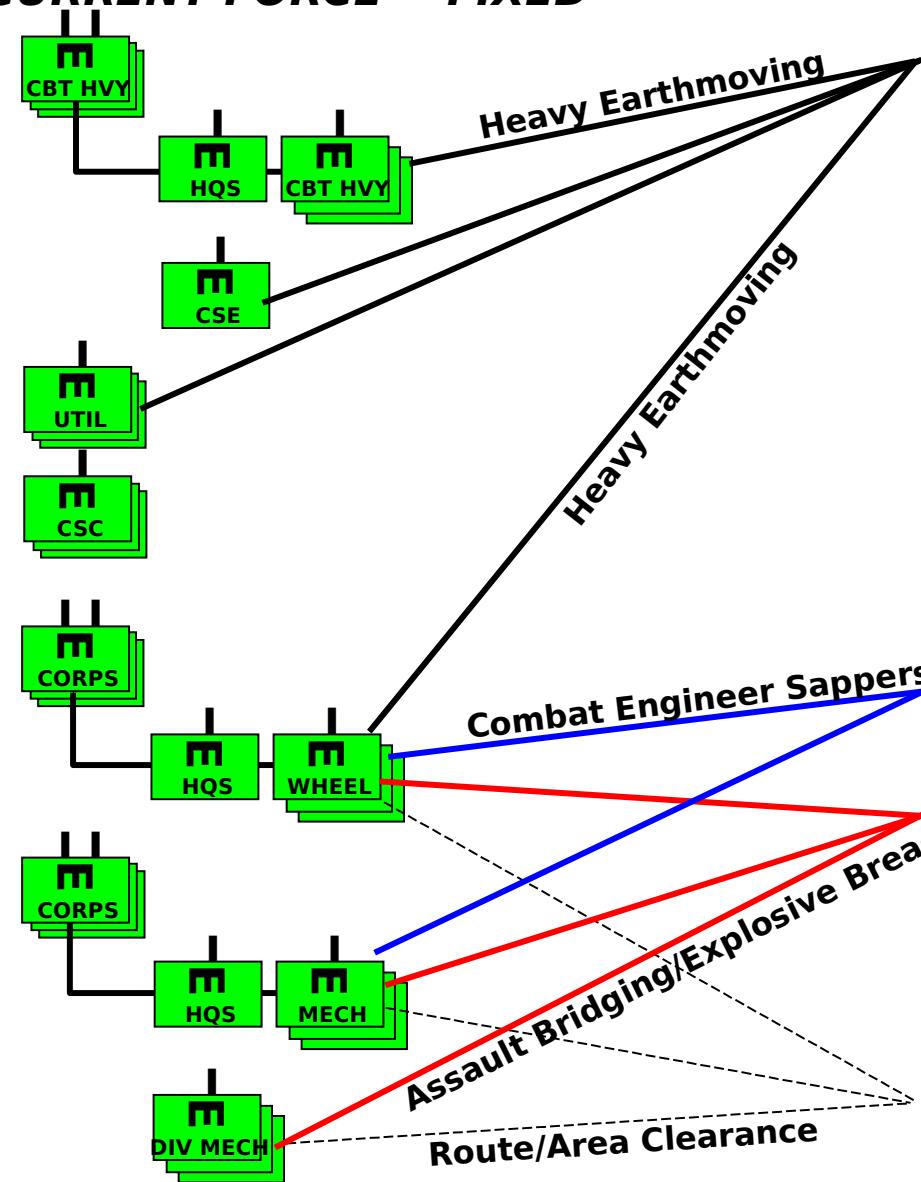
**Mix of A / R / EC / FC depends on:**

- Frequency required
- Integration required with other forces
- Where it occurs on battlefield and when

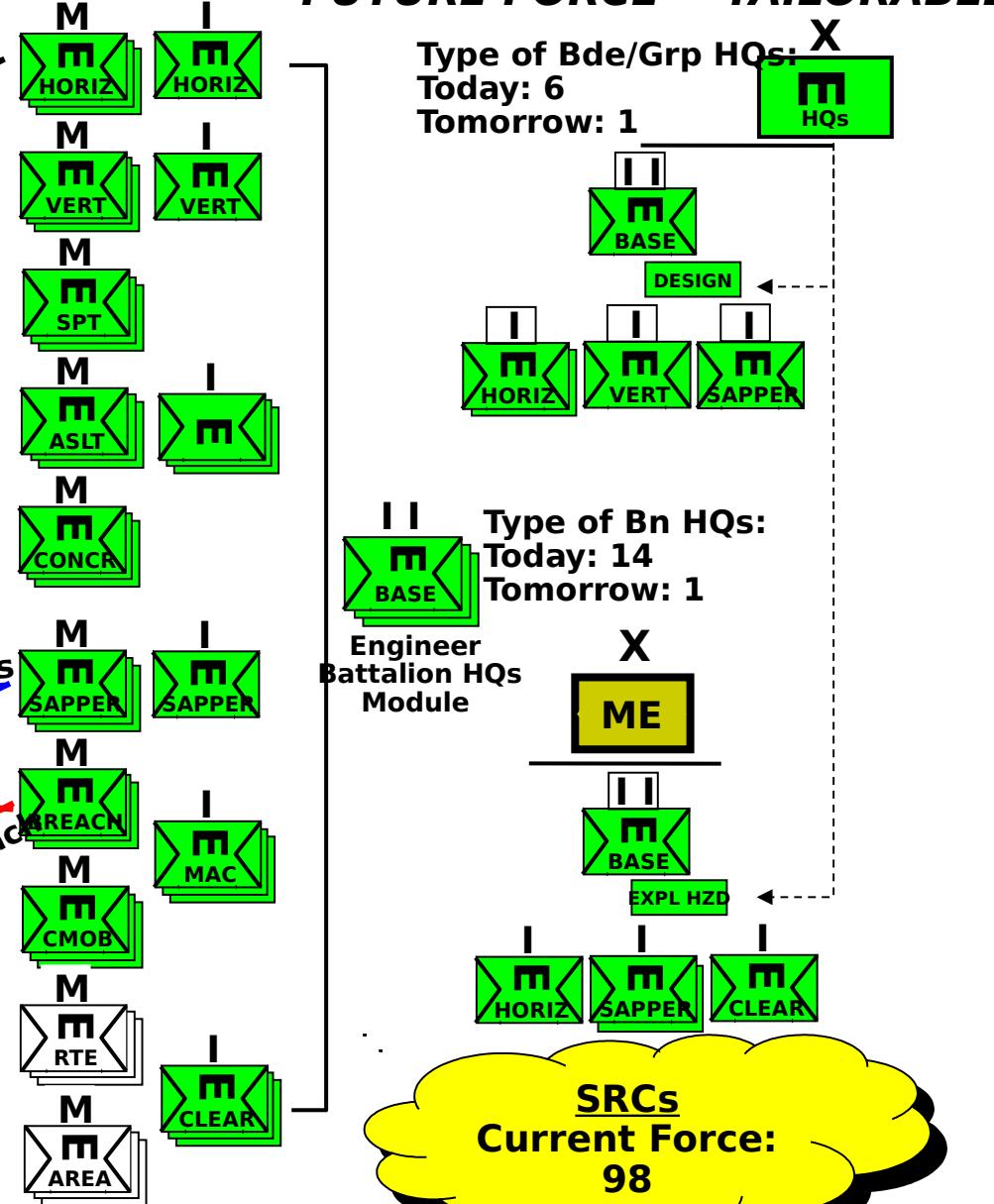
**Theater-specific conditions**

# From Mission Based to Capabilities Based

## CURRENT FORCE -- FIXED



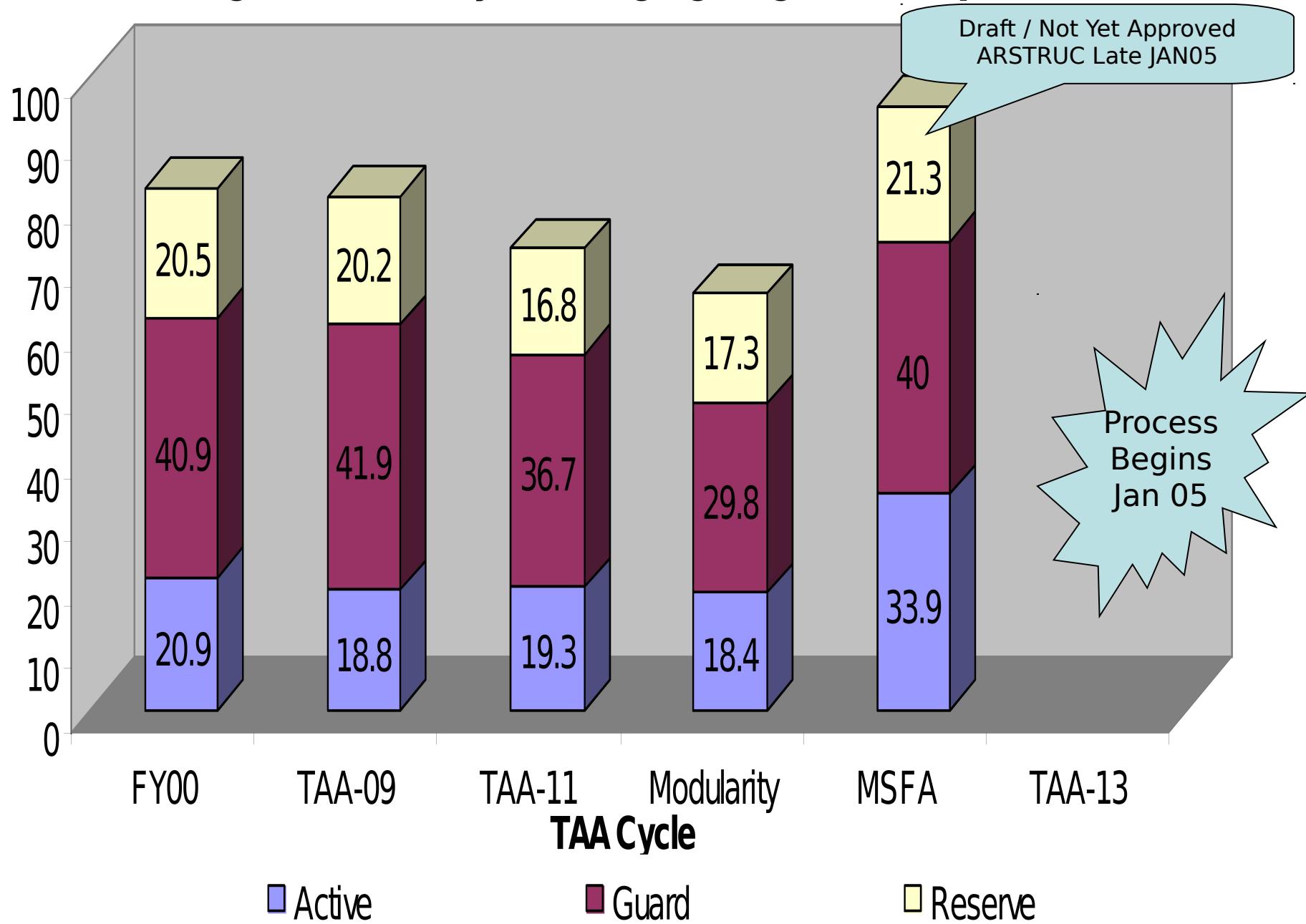
## FUTURE FORCE -- TAILORABLE



# Overview Current vs Future Engineer Force

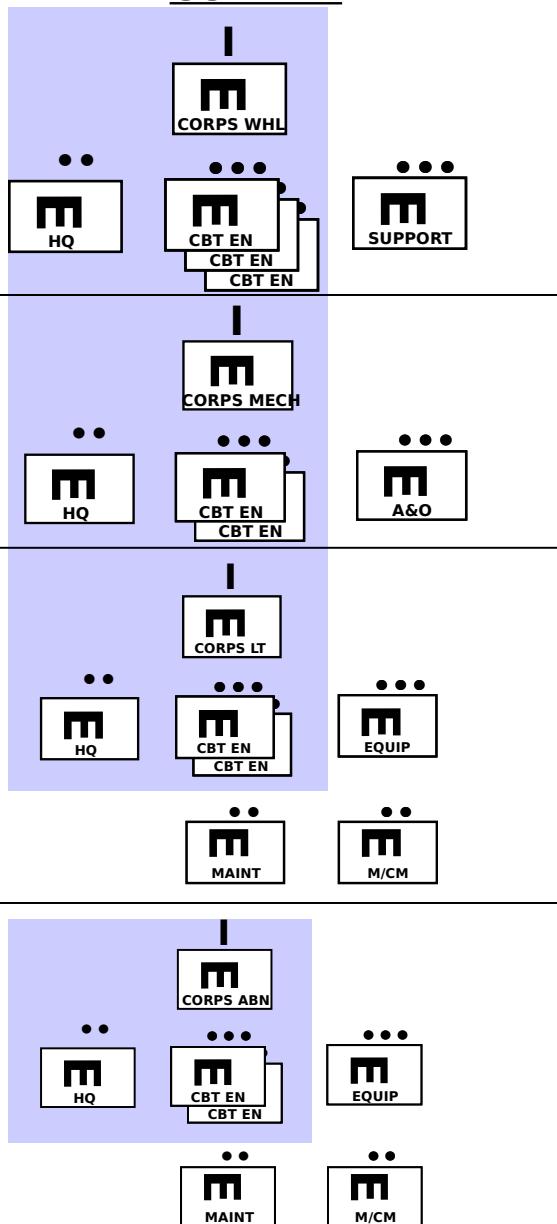
- Current Engineer Force has 98 SRCs – Future Engineer Force has 32
- 1 multi-functional Engineer Brigade HQs design versus 6 “stovepipe” Brigade / Groups in current force
- 1 multi-functional Battalion HQs design versus 9 “stovepipe” battalions in current force
- Modules and Companies are Capabilities Focused
  - Streamlines training and employment
  - Simplifies strategic planning – request discrete units with discrete capabilities
  - Captures migration of capabilities out of BCT engineer companies
  - Increases agility, strategic mobility, and focuses capabilities
  - Some growth in certain MOSs with equivalent reduction in others
- Within Current Resources, approximately:
  - 243 Companies (previously 243)
  - 60 Battalions (previously 67) + 82 BTBs
  - 10-15 Brigades (previously 21 “TAA11”)

# Meeting the Army's Changing Engineer Requirements



# Sapper Company

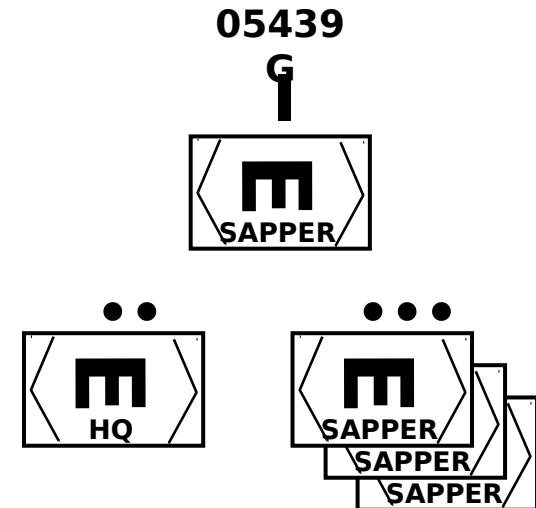
## CURREN



## CONCEP T

- Sapper company provides mobility, countermobility, survivability tasks and provides support of general engineering missions for Maneuver and Support Bdes
- Provides Battle Command for 3-5 sapper, assault, obstacle, clearance, or tactical bridge platoons operating as an Engineer Team
- Provides 660 manhours/day for general construction labor tasks to vertical, horizontal, or BCT Engineer Support Companies
- Company supports clearance missions, Maneuver BCTs, Support Bdes, construction missions

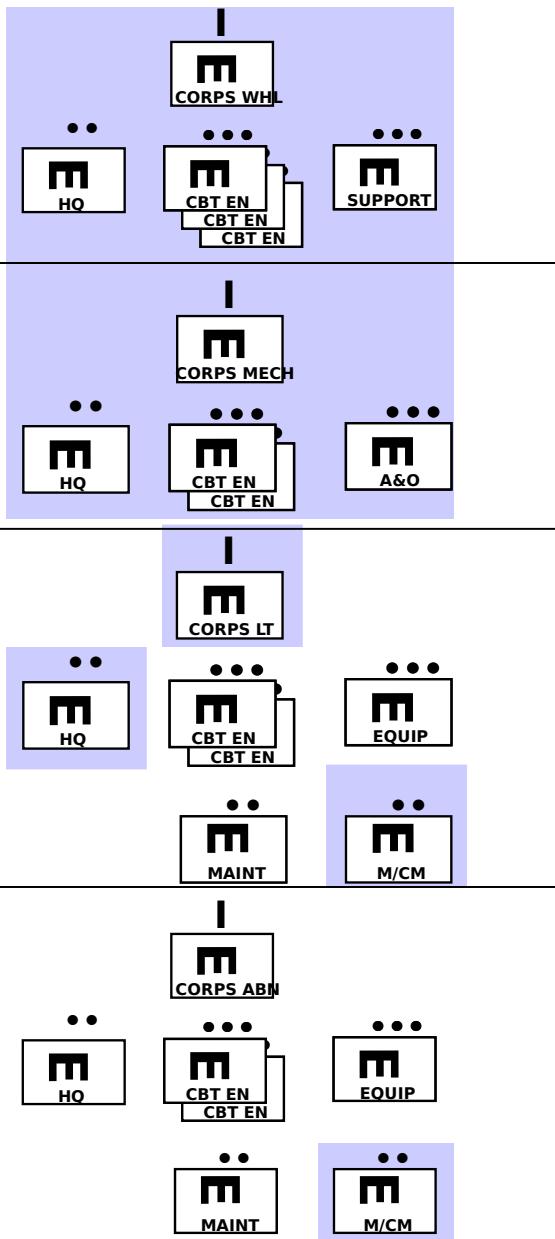
## PROPOSE D



= Capability Migrated

# Mobility Augmentation Company

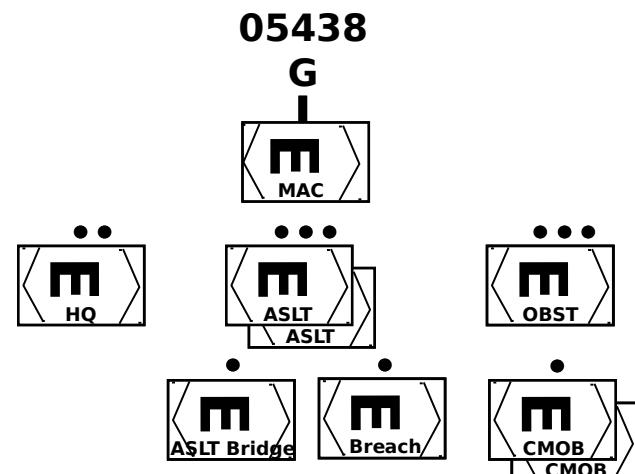
## CURREN



## CONCEP

- Mobility Augmentation Company conducts assault gap crossings, mounted and dismounted breaches, and emplaces obstacles in support of Maneuver and Support Bdes
- Provides Battle Command for 3-5 sapper, assault, or obstacle platoons operating as an Engineer Team
- Enables a Maneuver BCT to conduct 4 assault gap crossings; Enables an Infantry/Striker BCT to conduct 4 mounted breaches; Enables a Heavy BCT to conduct 2 mounted breaches; Enables a Maneuver BCT to conduct 4 additional dismounted breaches
- Can emplace 4432 linear meters of fix/disrupt tactical obstacle frontage without reload in support of Maneuver and Support Bdes
- Can employ 2 Breach Squads to execute hasty route clearance operations in support of Maneuver and Support Bdes
- Company supports Engineer Bde

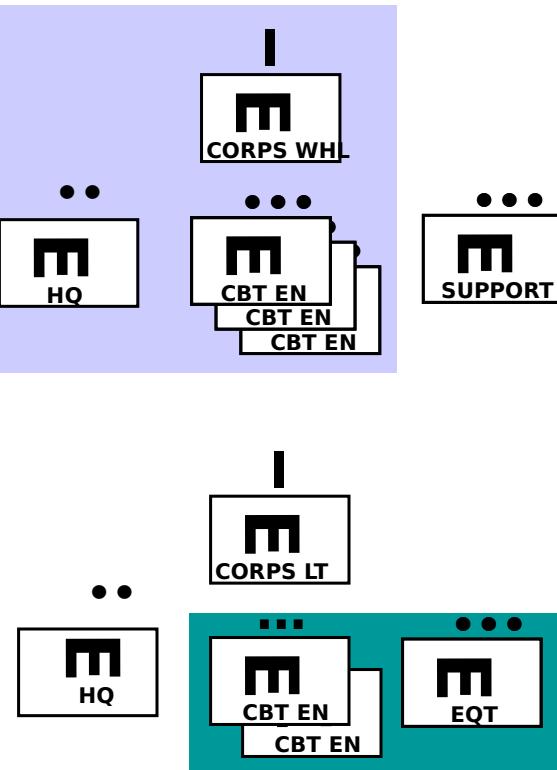
## PROPOSED



= Capability Migrated

# Clearance Company

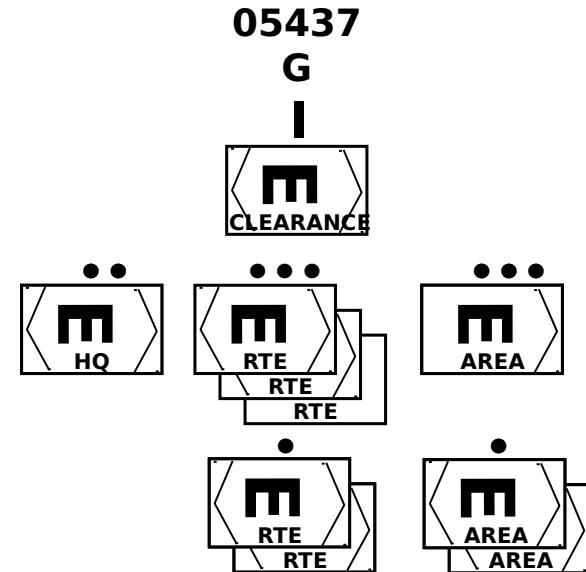
## CURRENT



## CONCEPT

- Clearance Company conducts detection and neutralization of explosive hazards along routes and within areas in support of Support Bdes
- Provides Battle Command for 3-5 route, area, or sapper platoons operating as an Engineer Team
- Can clear a total of 255 km of two-way routes per day
- Can clear a total of 8093 m<sup>2</sup> per day
- Company supports UEx, Engineer Battalion, Support Bdes

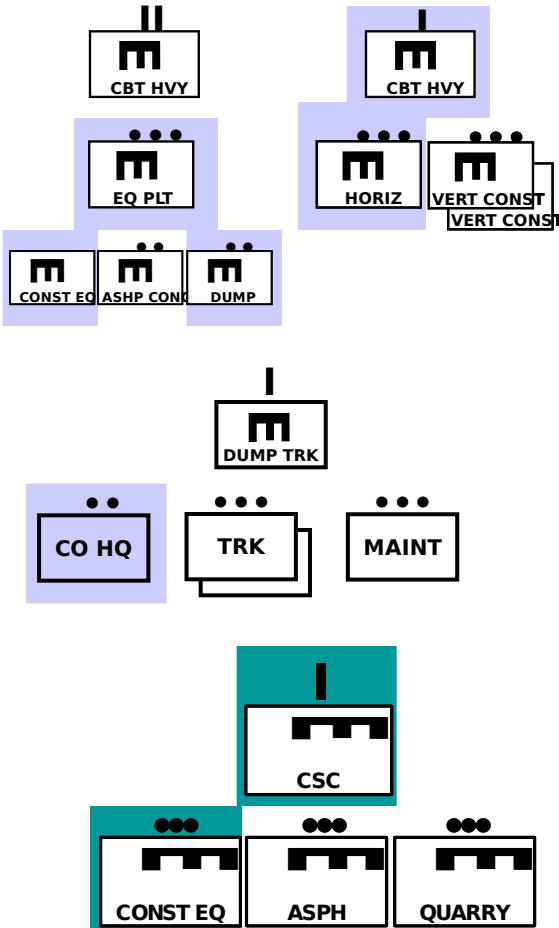
## PROPOSED



= Capability Migrated

# Horizontal Company

## CURRENT



## CONCEPT

- Executes general engineering missions to repair, maintain, and/or construct air/ground LOCs; repair and restore infrastructure, and enhance force and infrastructure protection in support of Maneuver BCTs, Support Bdes, or Engineer Bdes. Supports gap crossing operations

- Provides battle command for three to five platoons as an Engineer Team

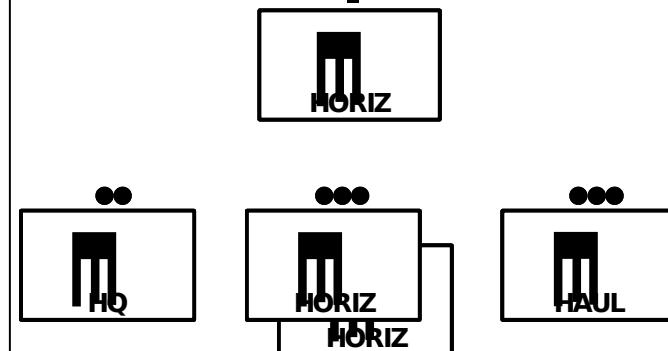
- To Engineer Battalions as part of an Engineer Brigade supporting a UEy, Engineer Command, or a Maneuver Enhancement Brigade

- May be part of a mission team that may augment a Maneuver BCT in defensive operations

- Reorganizes Combat Heavy Battalions and CSCs. No longer

## PROPOSED

05417 GO

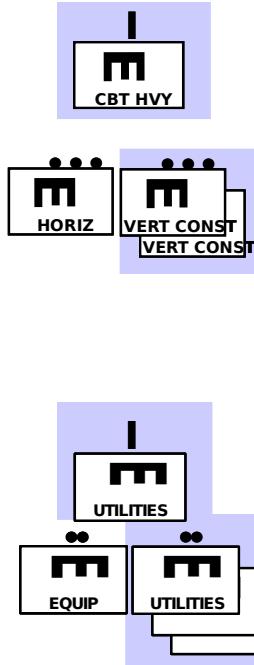


## ROA

- 1.23 per horizontal construction workload in LR 2-4 (except for maintenance of low traffic areas in LR2; damage repair of low damage roads in LR2; and damage repair of baseline 0 troop housing in LR2)
- 1 per HBCT during defensive operations
- .42 per HBCT
- .33 per strategic port = Capability Migrated

# Vertical Company

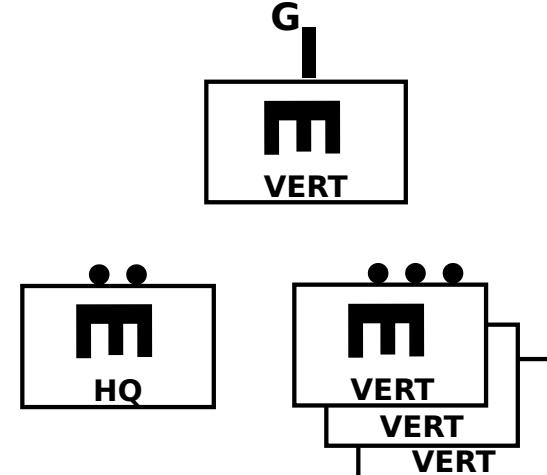
## CURRENT T



## CONCEPT

- Executes general engineering missions to construct basecamps, internment facilities; construct, repair, maintain vertical infrastructures in support of Support Brigades or Engineer Brigades
- Provides battle command to three to five platoons as an Engineer Team
- To Engineer Battalions as part of an Engineer Brigade supporting a UEy, or a Maneuver Enhancement Brigade
- Maintains current level of vertical capability; combines utilities and vertical capabilities into one organization when combined with a RDE-M platoon

## PROPOSE D 05418



## ROA

- **.95 per vert construction workload (1000 MH per day) in LR 1-4**
- **.33 per strategic port (will be offset by the port maintenance task)**



**= Capability Migrated**

**U.S. Army Engineer School**

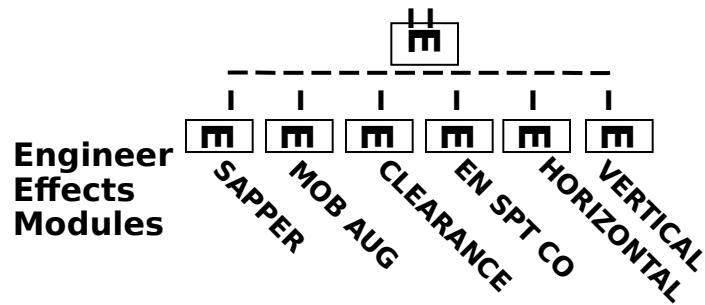
**Training Integration Office,  
Directorate of Training and  
Leader  
Development (DOTLD)**

**Analysis of the Future  
Engineer Force Training Model**

# Engineer Expeditionary Package

**Definition: An Engineer Expeditionary Package is a mission tailored engineer force with the agility, skills, and tools to effectively and efficiently assure the mobility of the BCT during the course of an operation.**

## Baseline Forces



# Combat Engineer Battalion (Template)

(05436G000)



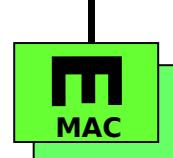
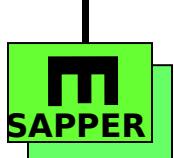
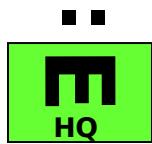
49-4-727-780 \*

19-2-56-77

\* Clearance Co  
used to  
compute  
battalion  
strength

(05439G000)

(05438G000)



5-0-99-104

3 PLTs + FMT ea 3 PLTs + FMT  
114 ea

(05419G000)

EN SPT 5-0-142-  
147

Or

MRBC 5-1-177-183

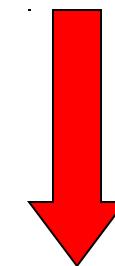
Or

\* Clearance 6-0-  
182-188

(05473L0)

(05437G000)

4-2-73-79



**Mission:** Provide tactical and operational-level assured mobility in a UEx AO (LRs 1-2) to enable force application and focused logistics; typically assigned to a Maneuver Enhancement Brigade and may augment embedded engineer capability in Maneuver BCTs (LR 1).

**ROA:** Provide battle command to 3-5 engineer companies in LR 1-2 in support of a UEx.

**Expl Hzd Det/Tm**  
(05601GH00/I00)

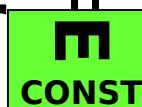
**Mine Dog Tm** (05550LB)

**Light Dive Tm** (05530LC)

**Allocated to Combat  
Engineer Battalions based  
on future Army  
requirements and current  
stationing considerations**

# Construction Engineer Battalion (Template)

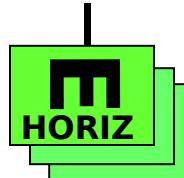
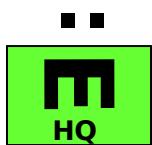
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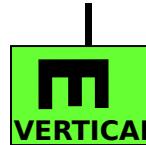
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(05417G000)



5-0-169-  
3 PLTs<sup>174</sup> FMT ea

(05418G000)

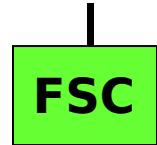


5-3-158-  
3 PLTs<sup>166</sup> FMT

(05402GL00)



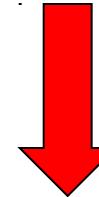
0-1-13-14



4-2-73-79

**Mission:** Provide operational and theater level construction in a UEy AO or Joint Operational Area to enable focused logistics and enhance protection; typically assigned to a Maneuver Enhancement Brigade or Engineer Brigade.

**ROA:** Provide battle command to 3-5 engineer companies in LR 2 in support of a UEx or 3-7 engineer companies in LRs 3-4 in support of a UEy.



**Haul Plt** (05520GF00)  
(05520GB00)

**Quarry Plt** (05520GC00)  
(05530LA)

**Asphalt Tm** (05520GA00)  
05520LE)

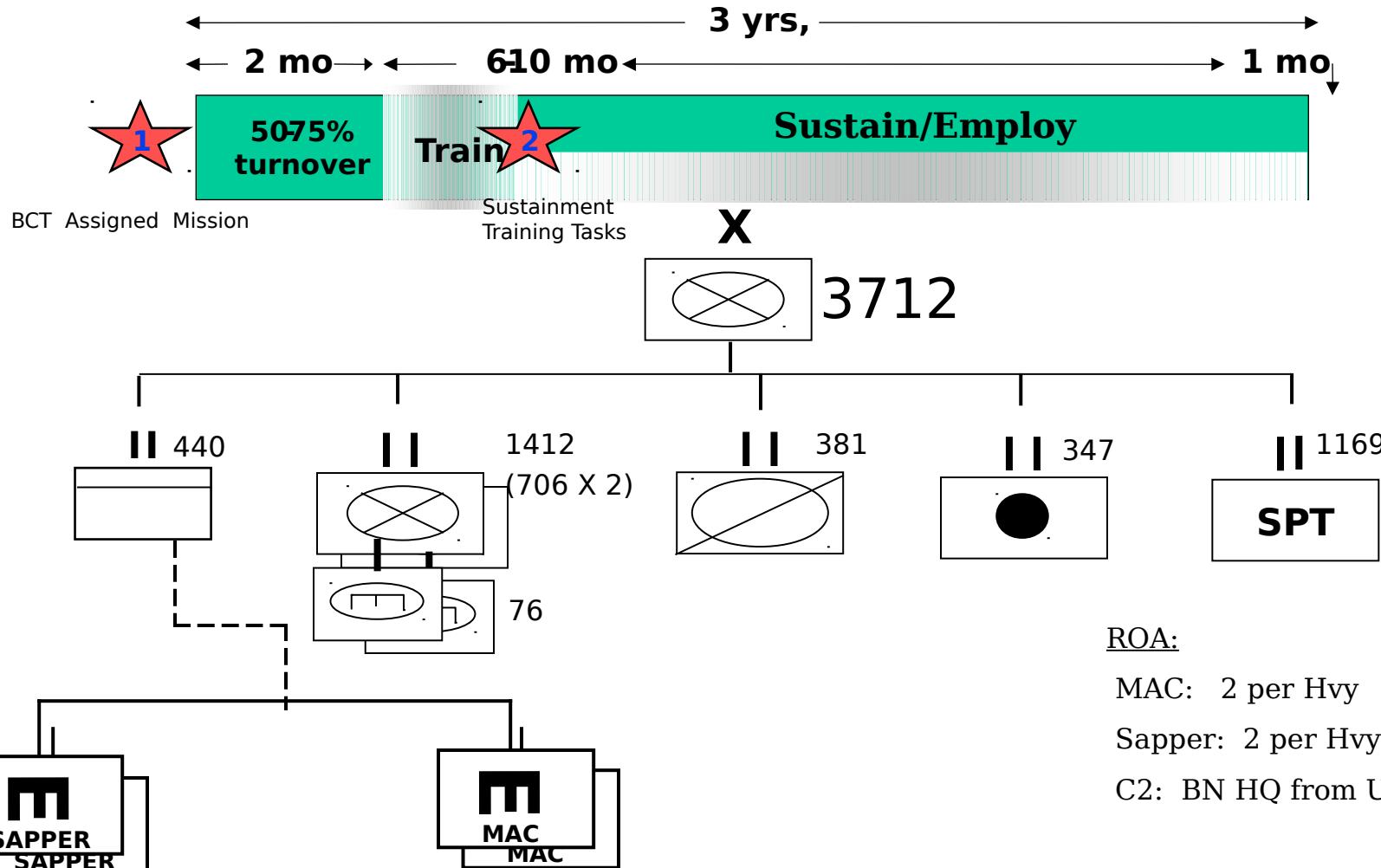
**Concrete Tm**

**Heavy Dive Tm**

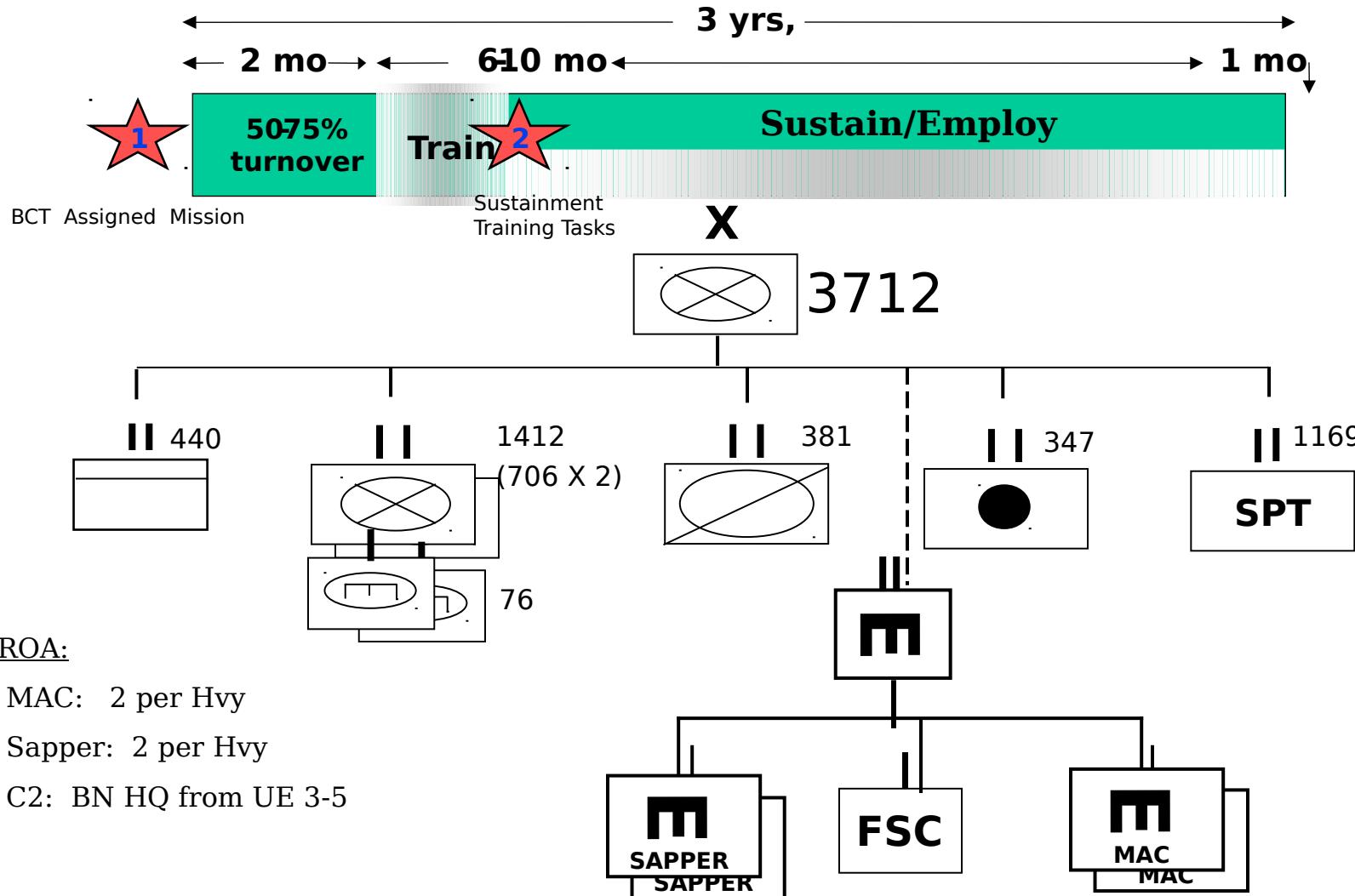
**Well Drilling Tm**

**Allocated to Construction Engineer Battalions based on future Army requirements and current stationing considerations**

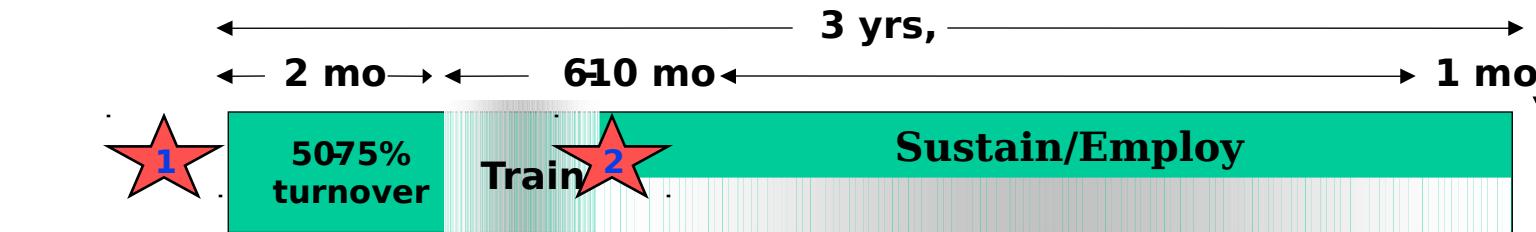
# COA 1- Heavy Brigade Combat Tm



# COA 2- Heavy Brigade Combat Tm

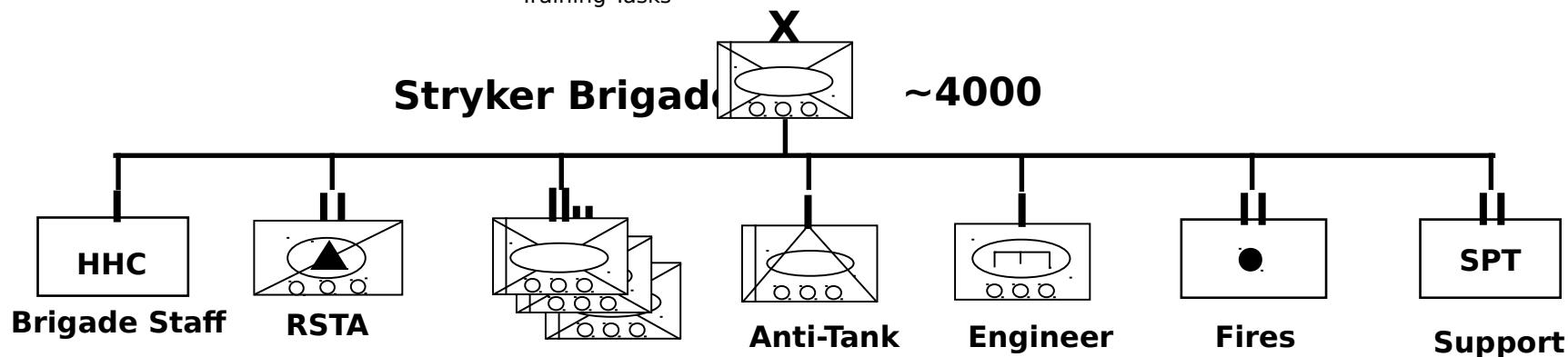


# COA 1- Stryker Brigade Combat Tm



BCT Assigned Mission

Sustainment Training Tasks



ROA:

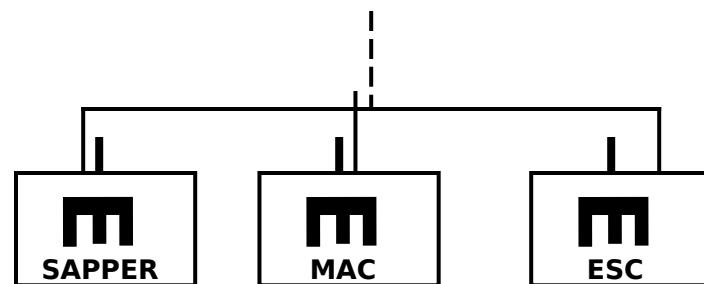
MAC: 1 per SBCT

ESC: 1 per SBCT

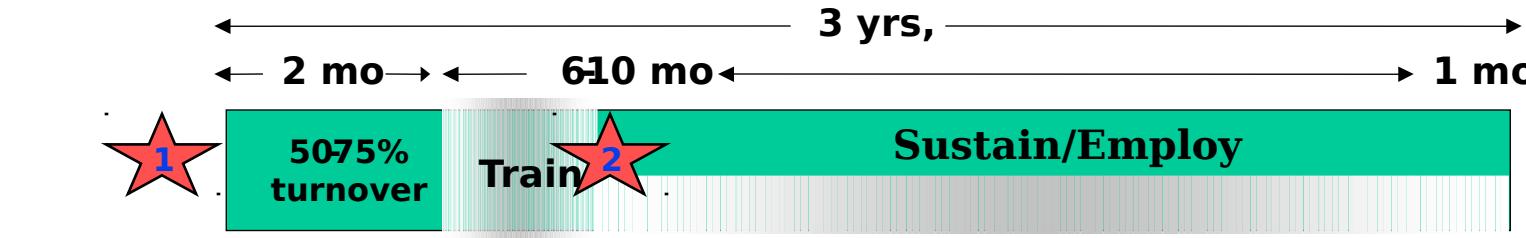
SAP: 1 per SBCT

C2: BN HQ from UE 3-

5

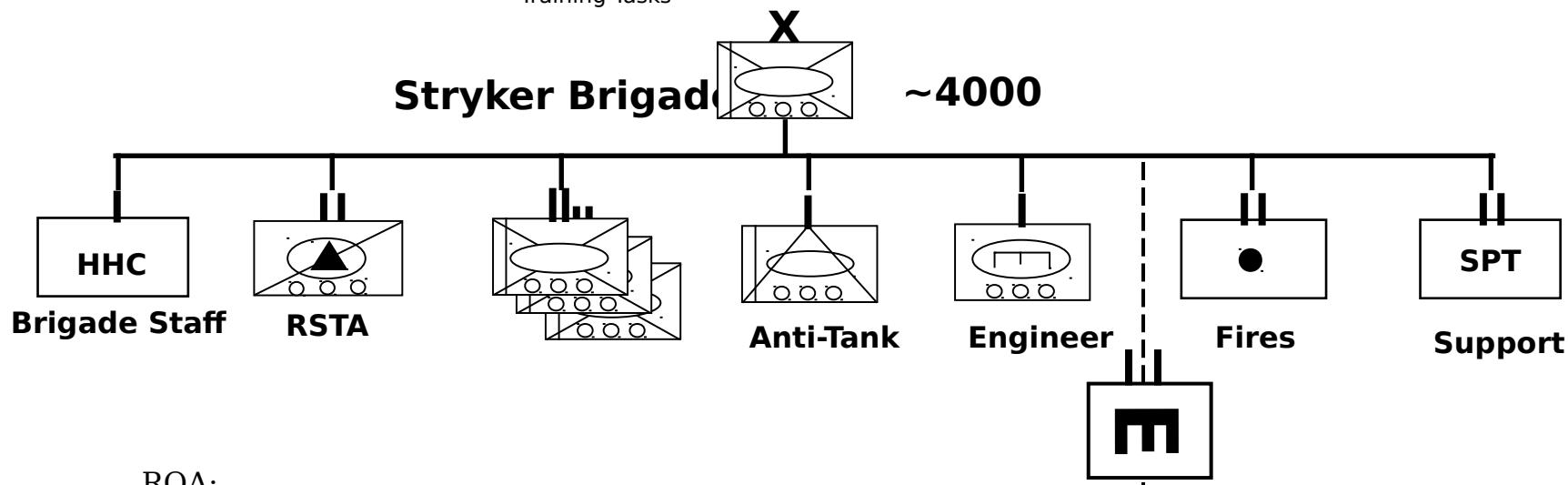


# COA 2- Stryker Brigade Combat Tm



BCT Assigned Mission

Sustainment Training Tasks



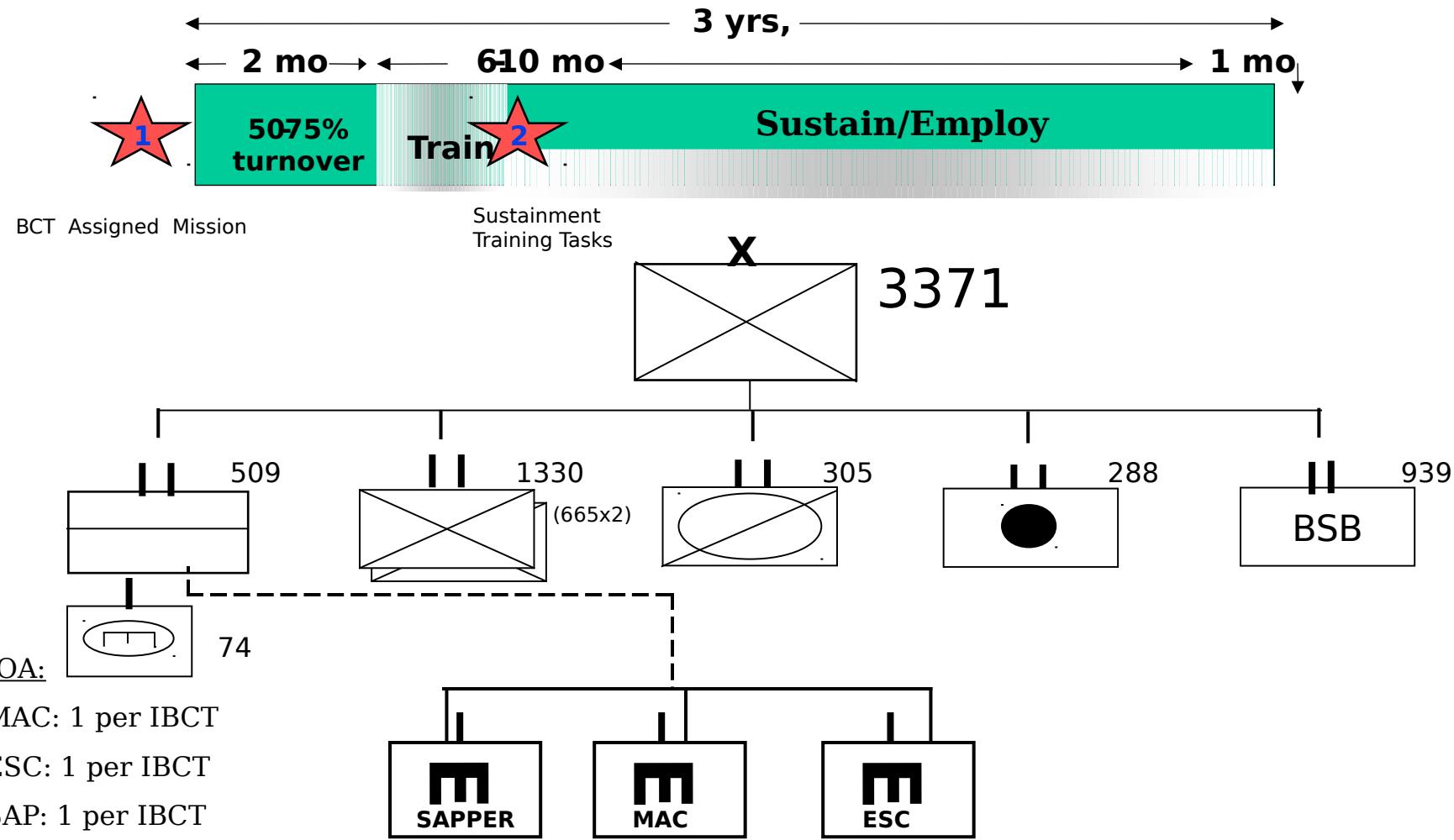
MAC: 1 per SBCT

ESC: 1 per SBCT

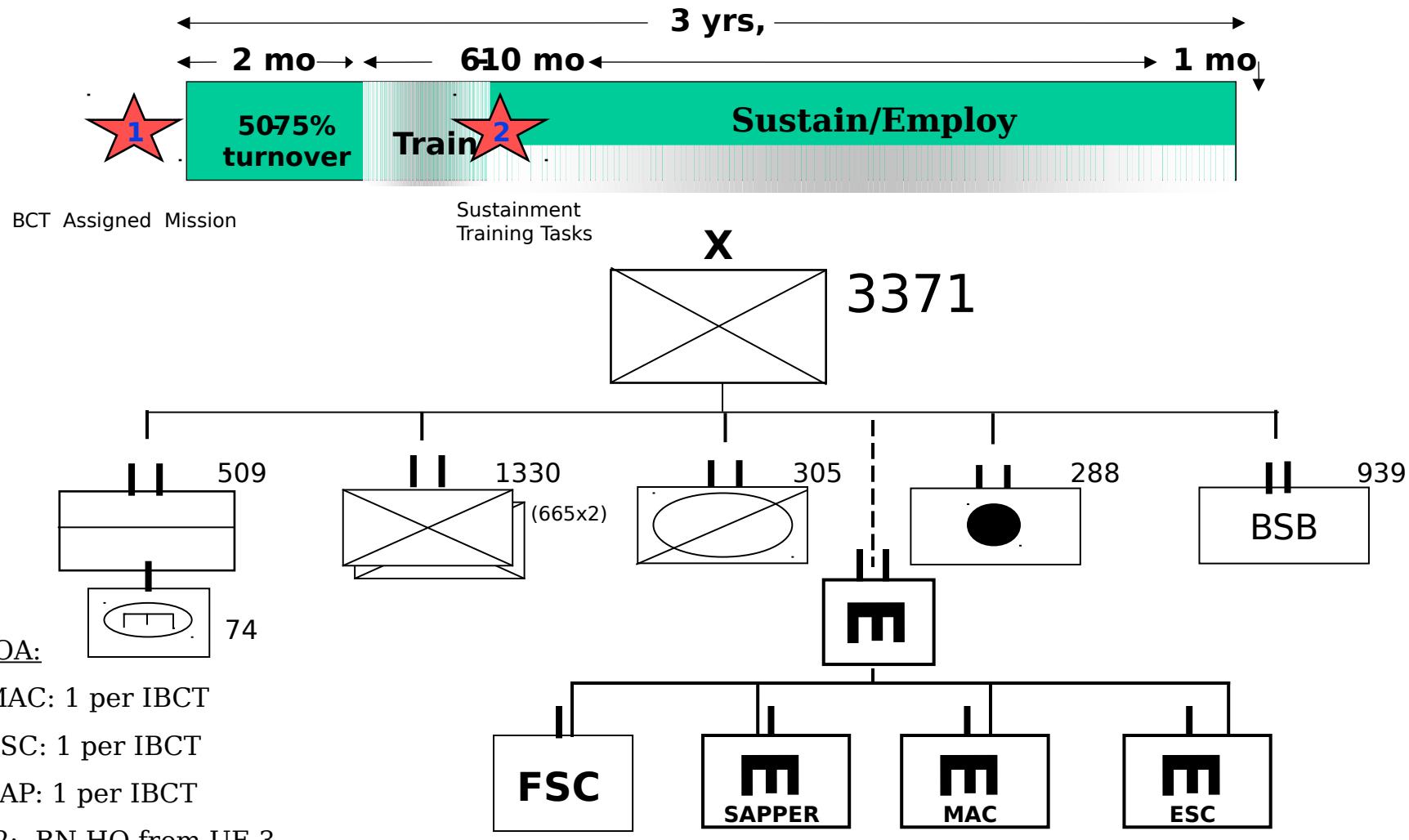
SAP: 1 per SBCT

C2: BN HQ from UE 3-

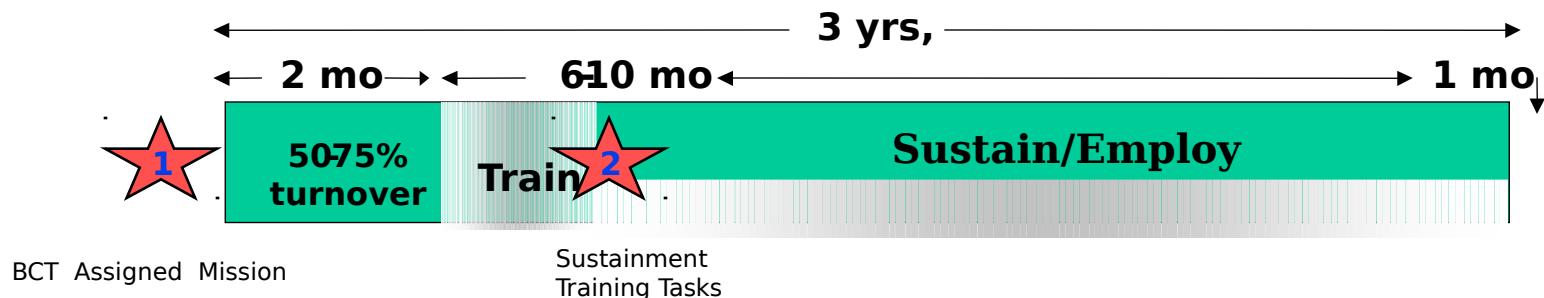
# COA 1- Infantry Brigade Combat Tm



# COA 2- Infantry Brigade Combat Tm



- **ISSUE: How is the Expeditionary Package Organized and Trained with the BCT?**
- **BACKGROUND AND DISCUSSION:**
  - DCD designed based on the ROA
  - HBCT Combat oriented receives 2 x Sapper and 2 x MAC
  - SBCT/IBCT Combat oriented receives 1 x Sapper; 1 x MAC; 1 x ESC
  - DP 1 Assigning of a mission based on 1 of 4 or combination of the 4 operations (offensive; defensive; stability; support)
  - DP 2 Sustain/Employ (Resources required to maintain)



- **ISSUE: What are the minimum Engineer Essential Capabilities required to support the BCT**
- **BACKGROUND AND DISCUSSION:**
  - **Engineer Essential Capabilities List (EECL) based on the Joint Engineer Capability Element**
  - **The task list has been cross walked with the AUTL and UJTL**
  - **The engineer effects modules capabilities cover the full spectrum of the JECE through numerous combinations of the effects modules**
  - **The JECE supports the full spectrum of operations**
  - **Expeditionary package developed for the first 72hrs of combat operations**

## Joint Engineer Capability Elements

Deploy Engineer Forces

Plan and Control Engineer Forces

Detect and Neutralize Explosive Hazards

Provide Gap Crossing

Enhance Mobility In Complex and Urban Terrain

Attack Enemy Freedom of Maneuver

Generate, Distribute, and Analyze Geospatial Data

Mobility Assessments

Provide Deployable Earthmoving

Repair / Construct LOCs

Repair and Restore Infrastructure

Enable Theater Access

Enhance Force Protection

Enhance Infrastructure

## Joint Engineer Capability Elements

				SUPPORT
				STABILITY
				DEFENSE
				OFFENSE
Horizontal Construction		Vertical Construction	Engineer Support	Mobility Augmentation
Deploy 'EN Forces				
Plan & Control EN Forces				
Detect & Neut Explosive Hazds				
Provide Gap Crossing				
Enh MOB in Complex & Urb Tr	X	X		X
Attack Enemy Freedom of Maneuver			X	X
Generate, Distr., & Anal Geo Data			X	X
Mobility Assessments				
Provide Deployable EM			X	X
Repair/Construct LOCs			X	
Repair & Restore Infrastructure	X	X	X	
Enable Theater Access	X	X		
Enhance Force Protection	X	X	X	X
Enhance Infrastructure Protection	X	X	X	X
BC & Contingency Fac Master Plan	X	X	X	

# Offensive and Defensive Capability to the BCT (1 of 4)

# Offense/Defense

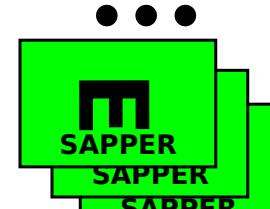
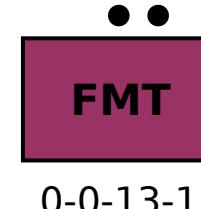
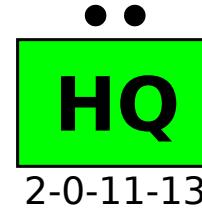
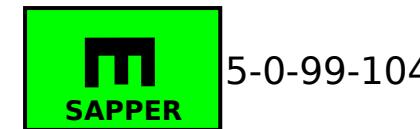
## JECE:

- Detect and Neutralize Explosive Hazards
- Mobility Assessments
- Attack Enemy Freedom of Maneuver
- Enhance Mobility in Complex & Urban Terrain
- Enhance Force Protection

## ENGINEER ESSENTIAL CAPABILITIES LIST:

- Plan/direct/perform EN recon.
- Report obstacle information.
- Execute hasty route clearance (level 1 and 2).
- Neutralize explosive hazards (BMD).
- Execute demolition targets.
- Conduct level 1 survivability operations.
- Prepare obstacle plan.
- Plan and control tactical and situational obstacles.
- Emplace tactical and situational obstacles.
- Construct protective obstacles.
- With augmentation:
  - Conduct mounted/ dismounted/urban breach.
  - Create a lane through an obstacle by manual tech.
  - Create a lane through an obstacle by explosive techniques.

# Sapper



- 1 - 21B O3- Co Cdr
- 1 - 21B O2- Co Ops Off
- 1 - 21Z5 - 1SG
- 1 - 21B4 2S - Ops Sgt
- 1 - 21H3 - Const Foreman
- 1 - 92Y3 - Sup SGT
- 1 - 74D2 - NBC NCO
- 1 - 25U2 - Fwd Sig Spt NCO
- 1 - 21B1 - SPC Cbt Eng
- 1 - 92Y1 - SPC Armorer
- 1 - 21B1 - PFC Trk Veh Driver
- 1 - 25U1 - PFC Sig Spt Sys Spc
- 1 - 92Y1 - PFC Sup Clerk

# Stability/Support Capability to the UEx (1 of 6)

# Stability/Support

## JECE:

**Detect and Neutralize Explosive Hazards**

**Mobility Assessments**

**Enable Theater Access**

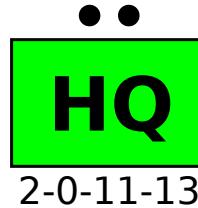
**Enhance Force Protection**

# Sapper

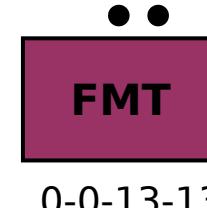
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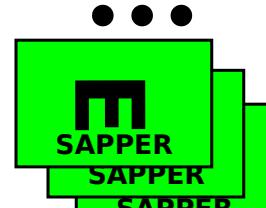
5-0-99-104



2-0-11-13



0-0-13-13



1-0-25-26

## ENGINEER ESSENTIAL CAPABILITIES LIST:

**Plan/direct/perform EN recon.**

**Execute hasty route clearance.**

**Conduct minesweeping operations.**

**Detect/mark/report explosive hazards (BMD).**

**Conduct level 1 survivability operations.**

**Construct protective obstacles.**

## With augmentation:

**Execute deliberate route clearance.**

**Conduct level 2-4 survivability operations.**

- 1 - 21B O3- Co Cdr
- 1 - 21B O2- Co Opns Off
- 1 - 21Z5 - 1SG
- 1 - 21B4 2S - Opns Sgt
- 1 - 21H3 - Const Foreman
- 1 - 92Y3 - Sup SGT
- 1 - 74D2 - NBC NCO
- 1 - 25U2 - Fwd Sig Spt NCO
- 1 - 21B1 - SPC Cbt Eng
- 1 - 92Y1 - SPC Armorer
- 1 - 21B1 - PFC Trk Veh Driver
- 1 - 25U1 - PFC Sig Spt Sys Spc
- 1 - 92Y1 - PFC Sup Clerk

## **Additional Army Modularity Information**

- Additional Modularity information can be downloaded from the TF Modularity FTP site:

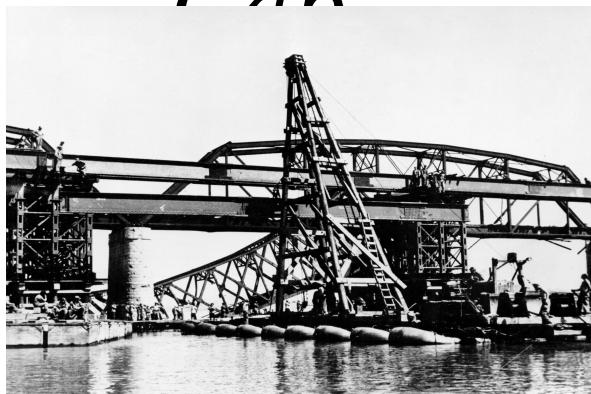
<https://tradocfs.monroe.army.mil/tfmdocs/>

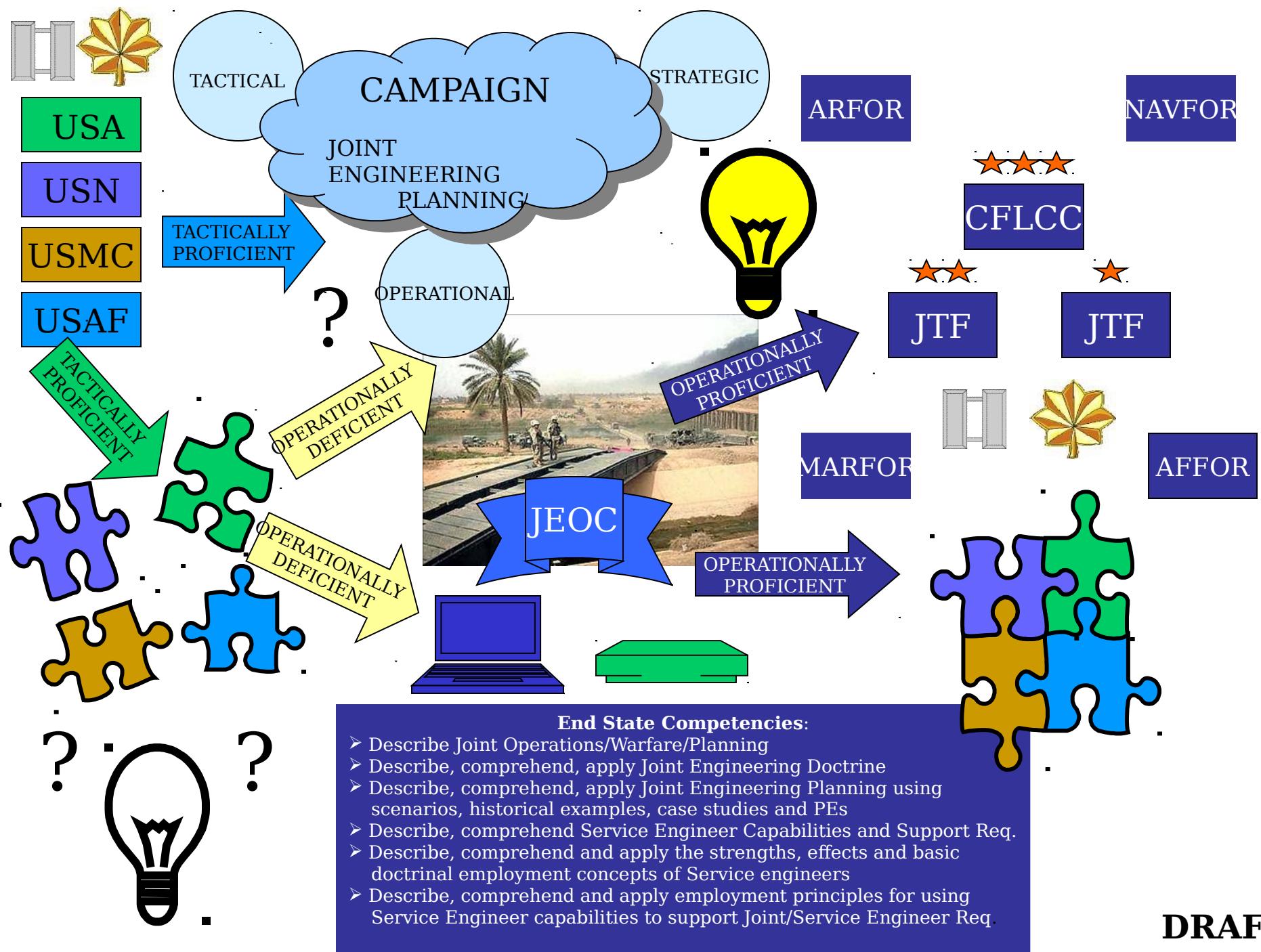
- The FTP site includes:
  - Briefings
  - Draft O&Os
  - Other Information

**Concept**

# Joint Engineer Officer Course (JEOC)

*“Bridging the Knowledge  
Gap”*





# JEOC Concept

- **Objective:**
  - Understand and be able to integrate engineer capabilities across the spectrum of operations to ensure support of the Joint Force Commanders Engineer requirements and accomplishment of the Joint mission.
- **End State Competencies:**
  - Describe Joint Operations, Joint Warfare and the Joint planning System.
  - Describe, comprehend, apply Joint Engineer Doctrine.
  - Describe, comprehend, apply Joint Engineer Planning using scenarios, Historical examples, case studies, practical exercises.
  - Describe, comprehend Service Engineer Capabilities and Support Requirements.
  - Describe, comprehend and apply the strengths, effects, and basic doctrinal employment concepts of Service Engineers.
  - Describe, comprehend, apply employment principles for using Service Engineer capabilities to support Joint and Service Engineer requirements.
- **Target Audience:**
  - Senior Company Grade and Junior Field Grade Engineer Officers of all Services
- **Length:**
  - +/- 40 Hour non resident Preparatory Phase + 14 day/80 Hour - Resident Course

# JEOC Concept

- Preparatory Phase
  - Non resident +/- 40 hours
  - Intro to Joint Ops/Planning
  - Intro to Joint Doctrine
  - Intro to Joint Engineer Ops
  - Intro to Sister Service Capabilities
  - Early ID of students @ Service CGSC
  - Branch Mgr involvement
  - Assignment Oriented Trng
  - *“Planners Tool Kit”* CD
- Resident Phase
  - 10-14 Days +/- 80 hours
  - Existing Eng/Joint Facility
  - Classroom/SGL Instruction
  - SGI/SGL w/ JTF Expertise
  - VTC Suite
  - Collaborative Planning
  - Review non resident materials
  - Guest Speaker Program
  - Planning Exercises
  - CAPSTONE Exercise

# DRAFT JEOC COURSE CALENDAR

## "RESIDENT PHASE"

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
DAY 1	DAY 2	DAY 3	DAY 4	DAY 5	DAY 6	DAY 7
ARRIVAL	INPROCESSING	<b>PLANNING PHASE</b> THE JOINT PLANNING SYSTEM	INTRO TO PLANNING	APPLIED PLANNING II	Joint Task Force Command and Staff Operations - Guest Lecture	NO CLASS
HOUSING SECURED	<b>INTRODUCTION PHASE</b> INTRO TO JOINT OPS & WARFARE	INTRO TO JOINT SERVICE CAPABILITIES	PRACTICAL EXERCISES	<b>PREPARATION PHASE</b>	PRACTICAL EXERCISES: APPLYING PLANNING AND COORDINATION TECHNIQUES FOR JOINT ENGINEER SUPPORT TO JOINT TASK FORCE SCENARIOS	CASE STUDIES REVIEW AND PREPARATION
	HISTORY OF JOINT OPERATIONS	APPLICATION OF JOINT SERVICE ENGINEER CAPABILITIES -Guest Lecture	APPLIED PLANNING I	INTRO TO THE CAPSTONE EXERCISE	CAPSTONE EXERCISE CASE STUDIES DISTRIBUTION	
	THREAT ANALYSIS - Guest Lecture		PRACTICAL EXERCISES	OPORD DISTRO & BATTLE PREP		
	JOINT CONCEPTS REVIEW					
	HOMELAND SECURITY BRIEF -Guest Lecture	INTRO TO JOINT ENGINEER DOCTRINE & RESOURCES				
SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
DAY 8	DAY 9	DAY 10	DAY 11	DAY 12	DAY 13	DAY 14
NO CLASS	<b>PREPARATION PHASE</b> (CRAWL)	<b>EXECUTION PHASE</b>	<b>CAPSTONE EXERCISE</b>	<b>CAPSTONE EXERCISE</b>	<b>CONCLUSION PHASE</b>	FINAL STUDENT DEPARTURES
CASE STUDIES REVIEW AND PREPARATION	BASIC SIMULATION EXERCISE	APPLYING JOINT ENGINEER CAPABILITIES INTO FULL SPECTRUM JOINT OPERATIONS	SACK LUNCH	SACK LUNCH	FORMAL AAR	
	FIRST SMALL JOINT EXERCISE (WALK)	CAPSTONE EXERCISE PREPARATION	INFORMAL AAR	ENDEX	GRADUATION	
	COE JOINT EXERCISES			CLEAN-UP	OUT PROCESSING	
					STUDENT DEPARTURES	

**DRAFT**

# JEOC Concept

## **Milestones**

- **FY05**
  - Continue research into the JEOC course structure and content
  - Continue coordination efforts to align the JEOC with the JFC's requirements
  - Continue to incorporate the input and requirements from all the Services into the JEOC development process
  - Provide the JOEB with a DRAFT concept for staffing and feedback
  - Continue to refine the budget requirements for the JEOC implementation
  - Submit funding requests
- **FY06**
  - Establish the JEOC Management Cell
  - Identify the Instructional Designer and Courseware Developer
  - Complete Program of Instruction (POI) Development and Courseware Design
  - Staff the POI and courseware through JFCOM and the Services
  - Determine the method of instruction and identify the JEOC Instructors
  - Conduct Instructor Needs/Cost Analysis
  - Begin lesson planning and course setup
  - Identify the JEOC location and begin facility preparation
  - Submit funding requests
  - Execute the Pilot Program (COA 1)
- **FY07**
  - Execute the Pilot Program (COA 2)
  - Submit funding requests

# The Problem

**Issue:** Today's construct for operations in explosive hazard (EH) contaminated theaters fails to provide maneuver commanders the freedom of action to accomplish missions effectively in the current operating environment.

**Engineer Company Commander and soldiers killed clearing cluster bomb units from airfield.**

Desert

Storm

**8 Soldiers killed clearing CEA  
Afghanistan Jan 2004**

**"There is a gap between the U.S. sapper's training on breaching only (or reducing an obstacle, if practical) compared to the highly technical but administrative approach of EOD units. A meeting in the middle is required."**

**"The artificial separation between EOD and Cbt Engrs must end -- Cbt Engrs will deal with UXO whether we want them to or not - just a matter of inadequate EOD troops to the UXO task. This is a structural deficiency that it is imperative for us to fix."**

**Bde Cdr, 3<sup>rd</sup> Infantry**

**Division, Iraq**

# OIF Maneuver/ENGR Lessons Learned

- Capability gap to protect the force from explosive hazards
- OIF Initial planning focus was on WMD, not CEA/IEDs/UXOs
- Limited EOD assets initially allocated, ENGR required to conduct more explosive hazard operations
  - Allocated follow on resources late in TPFDL
- Limited capability of ENGR to deal with explosive hazards
  - Untrained engineers can not positively identify UXO without training; therefore, casualties occur during missions

**EOD integrated with forces forward works  
- saves lives - it's how the field does it when  
they can.**

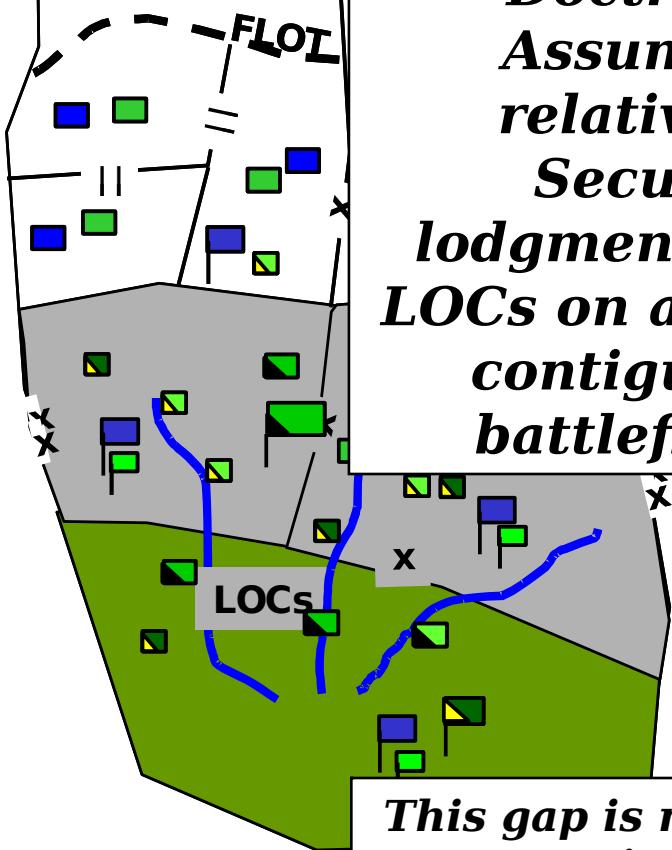
# The Gap

*Are we fighting the last war,  
today's war or tomorrow's war?*

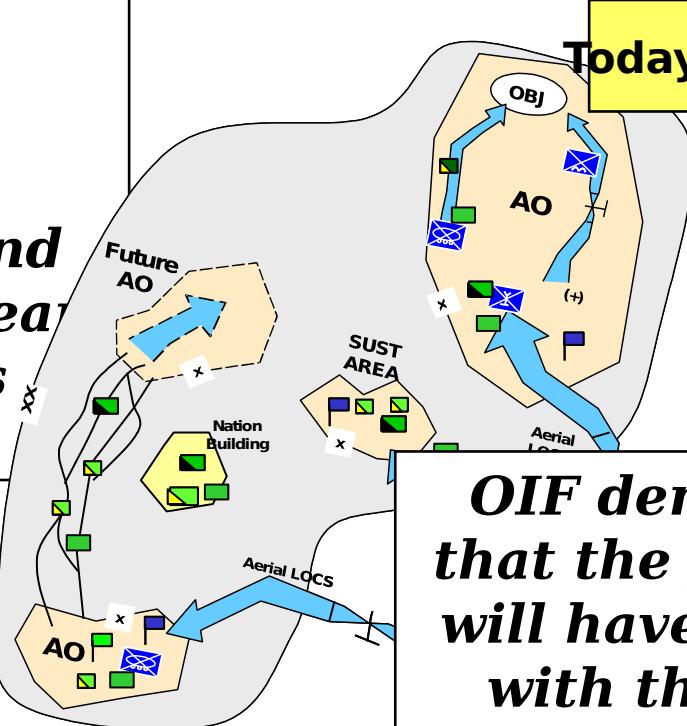
**In the Past**

***The Cold War  
Doctrine  
Assumed  
relatively  
Secure  
lodgments and  
LOCs on a linear,  
contiguous  
battlefield.***

***This gap is not a new challenge,  
we saw it to some degree in  
DS/DS, Somalia, Haiti, Bosnia,***



***Today and Tomorrow***



***OIF demonstrated  
that the future force  
will have to contend  
with threats on a  
non-linear, non-  
contiguous  
battlefield with  
relatively unsecure***

# INTERPRETATION OF THE GAP

## SAPPERS

### Breaching

UXO  
Clearance Operations  
Humanitarian De-mining  
Search Operations  
(Booby Traps, IED, Explosive Hazards)  
Mine/UXO Awareness Training  
Sensitive Site Exploitation (SSE)  
C2 / Synch / Coord  
Captured Arms and Equipment (CAE)

## EOD

RSP  
CBRNE  
IEDD



# Analogous Architecture

Combat Lifesaver   Medic   PA   Doctor   Surgeon



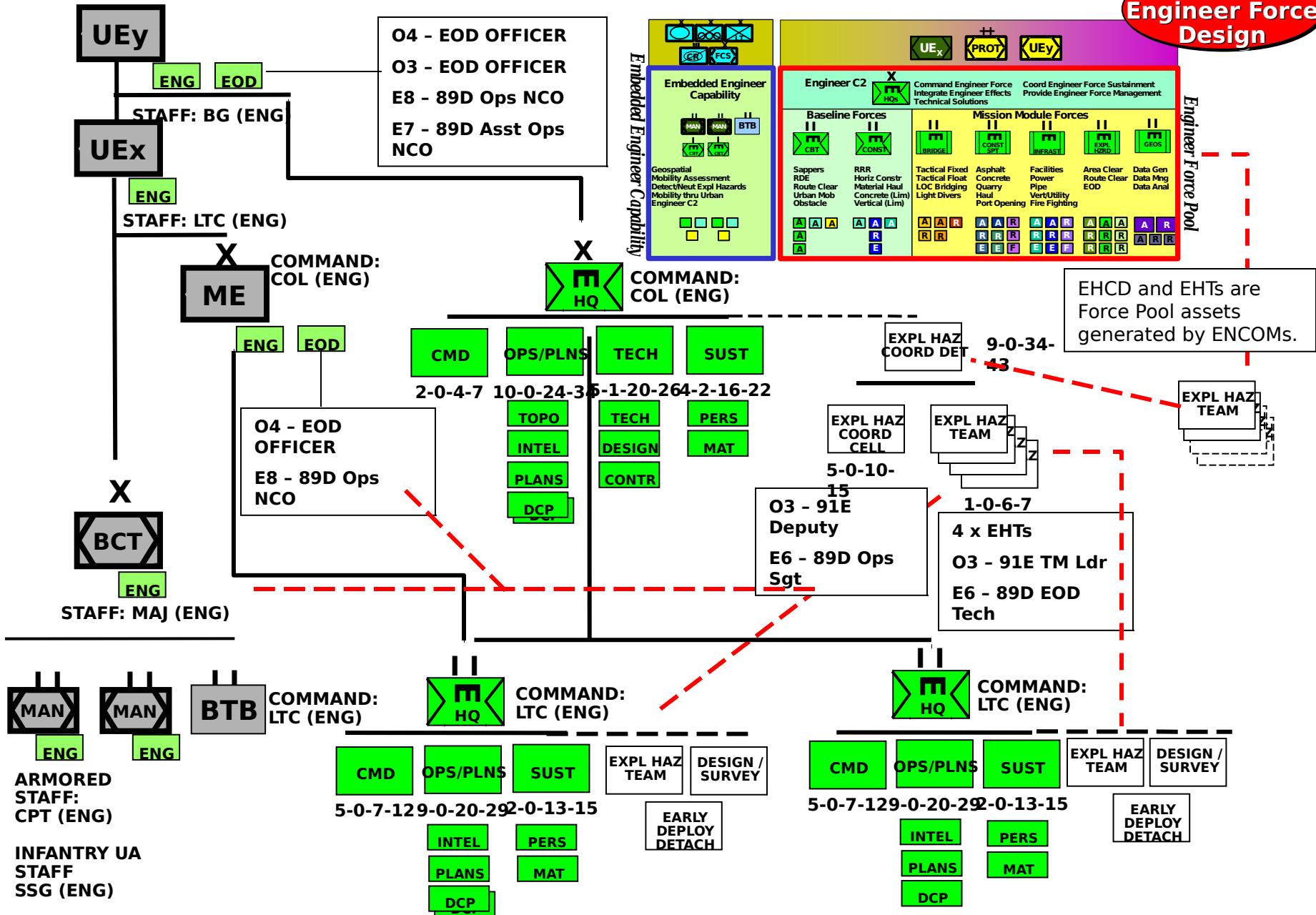
WARFIGHTER  
R  
**ID & React  
to UXO**  
**React to IED**

EORA  
Initial ID  
Evacuate  
Protect &  
Report

EOCA  
Positive ID  
Evac and  
Prot  
Destroy  
within  
Limitations

EOD  
Positive ID  
Force Prot  
Render Safe  
Pr  
**CBRNE**

# Organization Engineer and EOD Integration



# Question s

